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1927.

MARCH.

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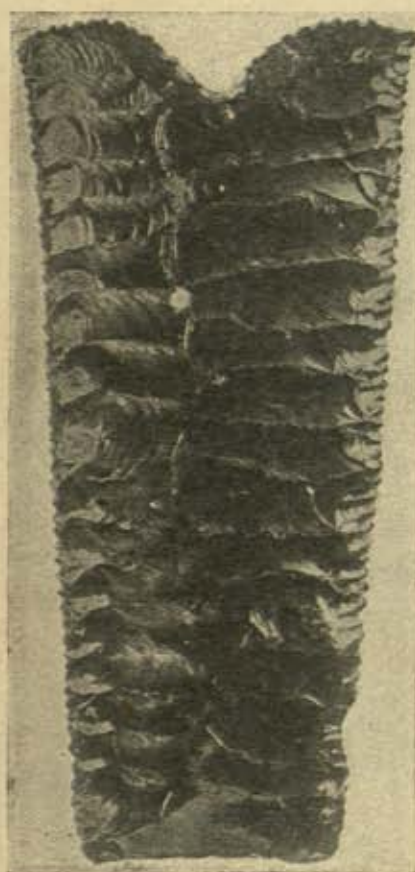
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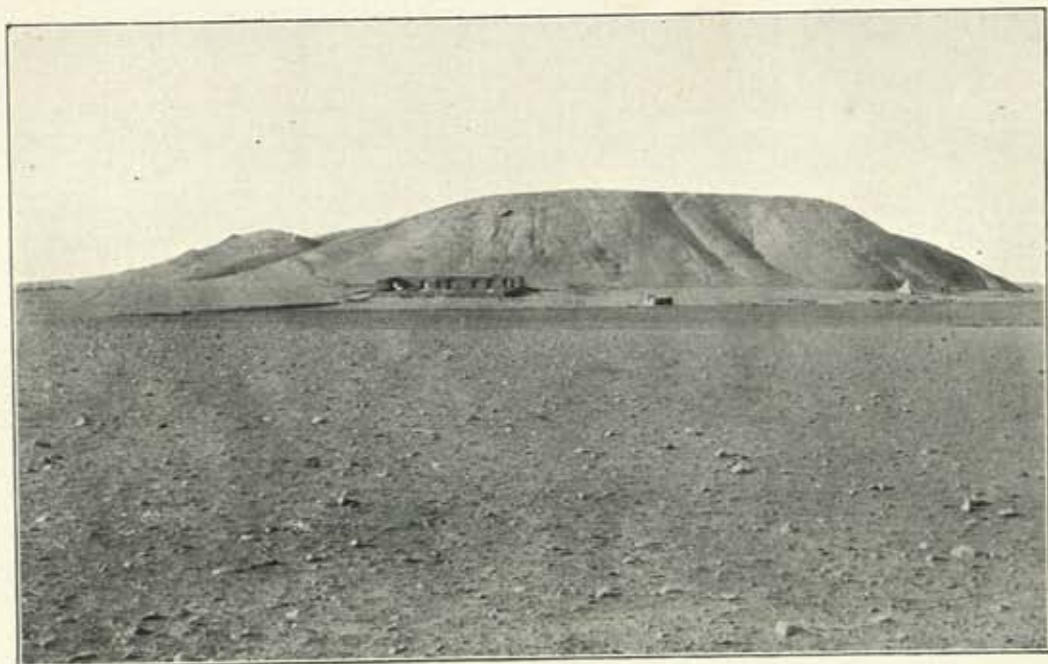
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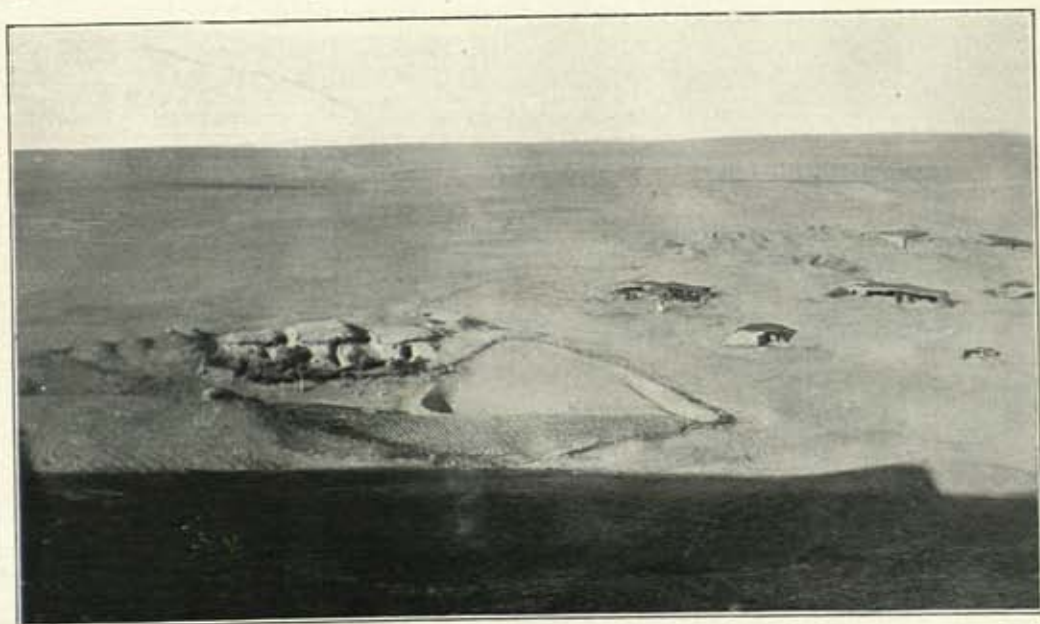
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SOUTH-EAST SIDE OF GERAR; MOUND 75 FEET HIGH, OF WHICH 50 FEET IS FORMED OF RUINED TOWNS. ROW OF EXCAVATION HUTS AT THE FOOT.



VIEW WEST FROM MOUND, LOOKING INTO ARAB TENTS AND HUTS; ILLUSTRATING HOW ABIMELECH SAW THE LIFE OF ISAAC AND REBEKAH FROM HIS PALACE WINDOW.

ANCIENT EGYPT.

EGYPT OVER THE BORDER.

WORK OF THE BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT.

THE choice of a site for excavation is always an anxious matter. There are, first, the possibilities in the known history to be reckoned; then the surface examination, and the various objects which are known to have come from a site; then the amount of late material which may have to be removed before results can be reached; moreover, all the facilities for work must be taken into account, such as labour supply, water supply, ownership of land, residence, obstructions official and local, European staff available, and money sufficient for the scale of work needed. On the decision rests the produce of a whole year of life of several eager workers, and the right use of some thousands of pounds. Every year's decision is, therefore, a serious risk.

Starting to work under fresh conditions of country and of diggers, makes even more uncertainty, and it was not until some search was made around Gaza that at last my decision was for Tell Jemmeh. With regard to the general region, our purpose was to be in touch with the Egyptian rule in Syria, for the sake of linking the history with that of Egypt, and for finding Egyptian objects which would serve for dating the Palestinian products. Gaza itself was not suitable for work, as the Roman town, and the Arab, cover the site; on the modern cemetery ground, Roman material was found down to the original field level. The old walls of Canaanite and Egyptian times, thirty-two feet high, are visible at one edge, but the modern fields lie high above the top of the wall. Moreover, the "dead hand" of the *wakf* holds that land, and negotiations would be tedious before working. South of Gaza is Tell Ajjul, near the old coast road, and on the Wady Ghuzzeh. That site is pre-Jewish, but it has only a few feet of soil on the top of a natural hill, and no walls visible.

Further inland up the Wady Ghuzzeh stands Tell Jemmeh, about nine miles south of Gaza. Though a few miles from the coast road, it is on the line from the hill country down to Egypt, the natural track of an eastern invader. It is a high hill, rising from the plain about seventy-five feet, of which fifty feet was the thickness of the town ruins, and there was no Roman or late Greek pottery upon it. Nor was there any Muslim sanctuary or cemetery to be avoided. There was not any part of it cultivated, or enclosed as private land. The slopes around it were steep, and suitable for down-throw of the clearances. It had all the prospects of age and the conveniences for work that we could seek.

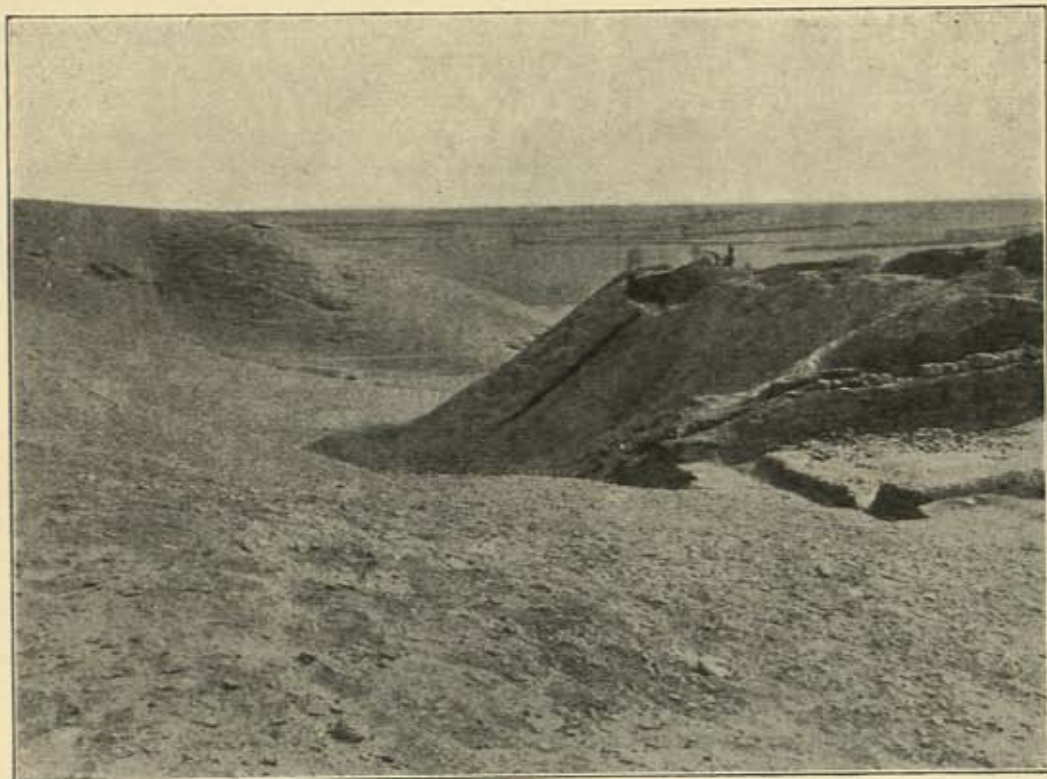
The historical setting of the Tell is shown by a site two miles distant, called on the map "ruins of Umm Jerrar," formerly assumed to be the Gerar of Genesis. But these remains are entirely of late Roman age, and could not be earlier, while Tell Jemmeh has fifty feet depth of ruins, all before the Roman period. It has, therefore, been concluded in recent years that Jemmeh is the site of Gerar. A similar shift of the name to a later ground occurs at Lachish, where near by is Umm Lakis, a Roman village; these later settlements were thus named "its mother was Lachish" and "its mother was Gerar," when the old cities fell out of use.

The first practical step was to establish our quarters. For this Mr. Starkey and Mr. Harding went to Tell Jemmeh and built our row of huts in twelve days. No bricks were to be had, but stones and mud make substantial walls, and chopped straw was bought by the camel-load to mix with the mud. This mixture of mud and straw weathers well; violent storms wash away the outer mud and expose a felt of straw which retains the mud within. The mixture is so tough that hammer and chisel is needed to cut through it. As soon as iron roofs could be put on, we moved down from Gaza and settled in.

The whole country along the way was absolutely bare dusty-brown soil, waiting for the winter rains, but, two months after rain was due, only a few showers fell. The settled Arabs tried ploughing when a shower encouraged them; but only a faint green haze showed where seed had been wasted. The rainfall is always uncertain south of Gaza; a few years ago a fine crop was gathered, since then each harvest has been worse than the previous one, now the drought was such as had not been known for sixty years, as an official told me. The cattle were dying by the wayside; while families with their laden camels, and flocks, were on the track northward, sometimes four or five groups in sight at once. It was evident what makes the Arab a nomad, the inevitableness of wandering to seek for uncertain food supply. To relieve the famine, the government was moving flocks north by railway free of cost, to be sent back when food is again available in the south. In such a terrible need, the providing of work and wages in this district becomes a famine relief work, and we soon had three hundred men and boys, each earning enough to feed one or two others. Nothing could have been better for our prospects, as there was a competition for work, and, with the neighbourhood so dependent upon us, our position in the wilderness is the more secure.

The absence of vegetation during the drought leaves the ground bare to the gales, which sweep up the dust in clouds, sometimes so thick that nothing can be seen fifty yards away. These gales often lasted two or three days; then work on the Tell was impossible—from the dust in the eyes and the force of the wind. Everything in our huts was covered with thick dust, and drawing, or even writing, was difficult from grit on the paper. At last, by the middle of February, there came violent storms which threatened to sweep away our roofing, with heavy rains and hail which whitened all the country. We could see the Judæan hills from Jerusalem to Hebron covered with snow for some days. The rain on the southern mountains fed the Wady Ghuzzeh till it ran down a torrent about 150 feet wide and six feet deep, going about six miles an hour. However unpleasant the weather was, at least we did not lose more than a few days' work altogether; while further north it is considered needful to stop work entirely during two or three months of the winter.

The supply of water for so many workmen is an essential service. During the drought we got what the people could drink from a steam pump a mile or two



VALLEY CUT OUT OF THE MOUND BY DENUDATION; REMAINS OF WIDE GRANARIES ON THE RIDGE TO THE RIGHT.



DIGGERS, AND TRAINS OF BOYS TO CARRY EARTH, WORKING ON TOP OF THE MOUND.

away, bringing many camel loads every day. But that is so salt that our own supplies have to come nine miles from Gaza, and even that disagrees with some, so that bottled or distilled water is also needful. Most of the party have been laid by two or three times, owing to the water supply. The rains relieved us by filling a great cistern of Roman date; but when that failed we were back on distant supplies.

These various conditions of modern life here are ancient history revived. In Genesis, the difficulty of sinking wells for watering cattle was the main trouble about Gerar, and there were continual disputes about keeping the wells. Yet Isaac had fat seasons, when he sowed and reaped a hundred-fold. There was a general shortage of water, interspersed with years when the rainfall produced the full fertility of the land. This region is a great grain country in good seasons, but uncertain, and the climate seems to be now just as it was three thousand years ago. Evidence of the importance of the harvests here at about 400 B.C. is given by nearly a dozen enormous granaries, varying up to 30 feet across inside, and altogether holding far more than would be required for a population of this district.

These conditions, and the position of Gerar, explain much of the Genesis narratives. We read of Gerar being in the land of the Philistines (xxi, 32, 34); Abimelech of Gerar was king of the Philistines (xxvi, 1, 8); the Philistines envied Isaac (xxvi, 14); the Philistines stopped the wells (xxvi, 18). Yet because the Philistines were not driven out of Crete till 1200 B.C., it has been assumed that there were none in Palestine till that date. We know how traffic was going on between Crete and Egypt for two thousand years and more before this—Cretan oil-jars passing in the 1st dynasty, and Crete copying Egyptian work; therefore, we cannot suppose that a sea-faring people would entirely disregard a rich grain supply which bordered on the Egyptian coast, and was easily within reach. The position of Gerar would be very attractive to such explorers. It looks down the valley, in view of the Mediterranean, whence signals could be readily passed. It is in the midst of a rolling fertile land, where heavy crops could often be obtained. It commands a wide stretch of views along the Judæan hills, and over to Beersheba. There is good reason, therefore, in the known conditions, why we should expect that a fort might be placed here, to extend the food supply of rich, but sterile, Crete. It is not surprising, then, to read of a Cretan Philistine as ruling in Gerar, though he had a Syrian general, Phichol (Pa-khal="the Syrian"). We know that invasions are usually preceded by some centuries of peaceful penetration, as by the Saxons during the Roman period in England, the Arabs under the Romans in Egypt, the Hyksos during the XIIIth dynasty. Similarly, we see by the evidences of trade that the Cretans must have long known this region, and probably drawn from it what they could, during many centuries before they needed it as a home of refuge.

The city of Abimelech must be far down in the fifty feet depth of ruins of Tell Jemmeh. To reach it, we need to cut away the later towns which were built over it. In doing so, these towns must vanish, and we are, therefore, bound to preserve all that can be recorded about them. At each level of building all the chambers must be cleared out, every wall planned, the sizes of the bricks measured, the levels of the top and bottom of each wall must be taken, and the aspect photographed from different sides. As the ruins are cleared, each has to be distinguished—the blocks of building, each with a letter, and the separate chambers with another, such as AL or FB. Then every object excavated is

marked with its chamber letters and its level in feet. Thus the relation of place and level is preserved for everything that is found, and the detailed study of the connections, and the meaning of the whole material, can be followed after the work is complete.

To keep up the record, every form of pottery is drawn to scale, with its place and level. There are about 120 forms from the top ten feet, nearly as many from the next six feet. All the forms of bronze and iron implements, of bronze fibulae, of lances and arrow-heads, netting bones and other objects are outlined full size, with their references. The plates of this record will provide for comparison with the results from other sites, and will form a continuous history of the civilisation in this southern outpost on the Egyptian border. Scarabs are often found, some seventy already this season; weights also are frequent here, including three marked ones of the *khairinē* standard.

The regular search for small objects is taught by half a dozen of our best Egyptian workmen, who train the raw hands whom we recruit from among the local Arabs. Many of these new men are developing into keen and efficient diggers, and both the men and boys keep a sharp look-out for even the smallest things, in order to gain the petty change which we give. When anything of value is reached, such as necklaces of beads, the men get some dollars on them to stimulate their diligence and care. Thus we are training a body of workers from whom may be drawn the experts for future work elsewhere in Palestine.

At first sight it seemed that labour would be difficult to obtain here. Around the great mound were only a dozen tents and two or three huts; within a couple of miles were more tents and huts, here and there, and the nearest village was Deir el Belah, five miles away. But soon men flocked up, and in a few weeks we had between three and four hundred men and children at work. Some we housed in huts, dug in the mound and roofed with iron, but most go home each night. Some come from Gaza, nine miles away, and live in tents or curl themselves up in little grave-like holes. Many of the local Arabs are excellent material to train; bright, sensible and willing, far pleasanter than the rather surly Canaanites of the towns. A Persian who is Inspector of Education for South Palestine, and who has travelled in most countries, says that the natives here are the most intelligent people that he has seen. They are very diligent in their own field work, and are remarkably different from the shiftless, lazy Bedawin elsewhere, who merely bully the cultivators. Thus the human material here seems to comprise the stock best worth training for future work.

The control most needful is that of the boys and girls who carry out the baskets of earth on their heads. They have not the sturdiness of Egyptians, so they only take light loads, and that but slowly. They have only tended flocks before, and have never been accustomed to muscular work, so they need feeding and training for it. There is improvement already, and a few years of good supplies and regular work will, no doubt, raise a better standard. The business of watching and regulating the discharges of earth out of the various passages from the work is essential for success; the slackness is merely due to habit, and not to fatigue, as they are lively enough when the work is over. The people are early risers by nature; in the twilight they stream up across the fields, and every morning, when I greet them, most of the picks are at work and the children carrying, well before sunrise. As the days lengthen, a longer rest can be taken in the heat of the day, keeping sunrise and sunset as the natural limit of work. During Ramadan, the month of fast by day and feast by night, men cannot

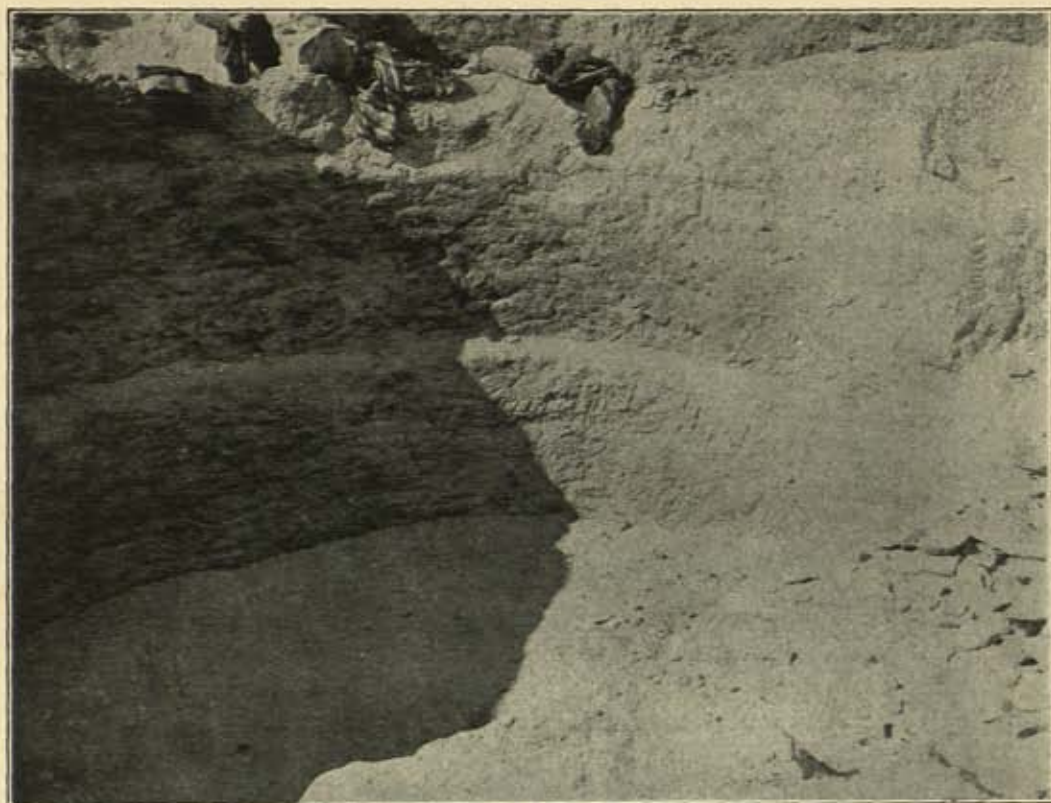
be expected to be fit for digging when they have neither food nor water all day. So the rule is a brief relaxation at midday, and then stopping off at 3.30. A few are so diligent that they put in three hours' ploughing, until the welcome boom of gunfire at Gaza sanctions their evening meal.

The appearance of the whole work is a wide area of a hundred yards across, in the top of the hill, bordered by high sides of the unaltered mound, rising twenty feet on either hand. All over this space are walls a few feet high in course of being cleared around, and left here for planning and photographing. About eighty or ninety men are breaking up the ground, and the lines of children carry off the earth to the dumps outside, through half-a-dozen long sloping trenches. In view of working down through about fifty feet of towns, it is needful to keep the discharges low, so as not to be surrounded by a ring of banks. As we deepen the excavation, the exit trenches must also be lowered. The short length of carrying to the outer edge, and the number of separate discharges on three sides, prevent its being worth while to have the complication of a light rail system.

The mound is of a fantastic form like the letter H in plan—a long ridge, at each end of which is a crossing ridge. At first sight the deep bays on each side of the long ridge seemed to be parts of the original shape, but a discovery on one of the end ridges gives a different idea. On the crest of this ridge are small portions of the side of two immense circular granaries, nearly all of which have been washed away into the valley between the ridges. These granaries can be closely dated, as just under one of them was a Greek vase of the Vth century B.C. So, in rather more than two thousand years, the greater part of the valley has been gouged out by rainfall. As the place had a long history before that, the ground we have to examine is, perhaps, not more than half of the original area. There are four periods of construction, so far as examined.

(I) The granaries belong to the latest occupation of the site in the Vth and IVth centuries B.C.; after that there were left only a few scraps of pottery and some Arab squatters. The medium size of granary is twenty feet across, and probably thirty feet high; the larger ones are thirty feet across inside, and rose probably fifty feet, thus holding about seven hundred tons of grain each. Altogether there was storage for three or four thousand tons. The purpose of storing such a large amount here, in the Vth century, seems to have been for the army base of the Persians, to enable them, when necessary, to move a large army across the desert into Egypt, with full supplies behind it. To the Persian the hold on Egypt was of great value, and the power of striking quickly at any insurrection was requisite. There were also some walls of store-chambers, probably of this age, which were not built of brick, but of layers of mud about four inches thick, piled between boards to dry.

(II) On removing the latest structures, two great blocks of building appeared. One was a square fort, with deep cellular chambers, and massive walls, similar to the forts of Naukratis and Defenneh. The pottery with this was of the VIIth century B.C., and a slight foundation deposit, of model corn-rubber and calf bones, marks this as of Egyptian origin. The Canaanite usually buried a lamp (or an infant) as a deposit, and the Assyrian used inscribed cylinders to mark a foundation. As Psametek I was holding this region for a frontier against the Scythians, it seems certain that this fort was of the same age as his other two forts of the same design. Around it were large numbers of bronze arrow-heads, of the regular Scythian form, later adopted by the Greeks. A more decisive object was one of the very wide kite-shaped iron arrow-heads, such as are found in



INTERIOR OF LARGE GRANARY, WITH LEDGE FOR BRICK CONICAL DOMING.



RUDE POTTERY FIGURES OF THE NATURE-GODDESS, ABOUT IXTH TO VIIITH CENTURY B.C.

Central Russia from later times. The purpose of this wide thin blade was, probably, to attack horses. The other building seems to be of the same period, but had less massive walls, and an annexe is as late as the Vth century B.C.

(III) After removing these buildings, a lot of chambers appeared, built with little regard to any continuous plan, merely grouped two or three together, and partly following older walls. The Cypriote pottery of the VIIIth and IXth centuries serves to date this, also a fine lazuli cylinder with figures of Babylonian monsters.

(IV) Buildings of grand style lay below. Great smooth bricks of yellow clay, $20 \times 11 \times 6$ inches, ten times the bulk of a modern brick, were laid in sand for foundations, from three to six courses in depth. This is a thoroughly Egyptian method of construction, and obviously these are Egyptian buildings. The latest date to which they can be assigned is Shishak, whose hold on Palestine has lately been proved by his triumphal stele at Megiddo. Below these buildings lie thirty feet of ruins yet to be uncovered; part of this we may hope to clear before closing the work.

The archaeological value of the excavation lies in the long series of pottery, bronze, and iron objects, which are all dated relatively, and linked to history by the connection of successive towns to known epochs. Every form has been drawn, and every example found has a reference on the drawings, showing its range of levels. The series of fibulae varies from massive semi-circular forms cut with varied ornament, through all the kinds of knee-fibulae, until the curved shape returned with a pin riveted on, and no spiral spring. The lances and arrow-heads are very varied in form and in origin. Many pottery figures of the nature goddess, and of animals rudely modelled, have been found; also small cubical fire altars of limestone, sometimes engraved; there are a few hoards of carnelian necklaces found in the houses. Dozens of scarabs, both Egyptian and local imitations, connect with the Hyksos kings and come down to Greek times. Weights frequently come to light, and being all levelled, they will help in fixing the history of the various standards; three are marked of the *khoinē* standard. Many of the fine objects that have rewarded the work are requisitioned for the Palestine Museum, but several will appear in London, along with the series of archaeological value for future reference. In this season we shall have contributed to the continuous record of the civilisation in the Jewish period, and have trained a native staff which will be a resource in the work of others elsewhere.

FLINDERS PETRIE.

A GRAECO-ROMAN APIS.

THE accompanying illustration represents a bronze statuette of a vigorous young bull, which measures 7.8 cm. in length and 6 cm. in height. It was found in Cologne and is now exhibited amongst the Roman antiquities in the Wallraf-Richartz Museum (No. 1089). The left foreleg is incomplete and has not been restored. The right foreleg is raised; the head is erect and turned sideways; the horns are small, and on the nape of the neck between the ears and behind the horns is a hole.



Furtwaengler has discussed a series of similar bronzes,¹ some of which have been found in the Rhineland. The function of the hole was revealed by finding an attribute fitting into it in some specimens, the attribute being generally a crescent moon, and sometimes an owl, eagle, or female figure. The shape of the hole in the Cologne specimen would indicate a crescent moon. Furtwaengler considers this type of bull to be a Graeco-Roman version of the Egyptian Apis, showing the wide spread of the cult in Roman times. The substitution of a crescent for the sun's disc may be due to a mistake, supported by a knowledge of the connection between Apis and the moon, or to a deliberate preference for a plastic attribute in place of the mark of the crescent on the animal's flank. (Isis is sometimes represented with a crescent in Graeco-Roman art.) Preference for a plastic attribute would also explain the presence of an eagle between the horns, since a picture of this bird was a mark of Apis (Herod. iii, 28), whilst the owl may be due to the equations Io-Isis, Epaphos-Apis and Isis-Neit-Athena, and to the transference of the mother's symbol to the son.

This bull is readily distinguished from the three-horned Celtic Bull god by the position of the hole, as the hole for the third horn is in the curly patch on the forehead, and not on the nape of the neck.

L. B. ELLIS.

¹ *Bonner Jahrbücher* 107, 1901; 108-9, 1902; 114-15 1906.

THE COPTIC MUSEUM IN CAIRO.

ONE of the most interesting spots in Cairo, interesting from every point of view, historical, archaeological, political, and religious, is the great fortress of Babylon—a unique monument of Roman rule in Egypt—standing on the bank of the Nile opposite the eternal city of Memphis. It was on this site that the Holy Family took refuge during their flight into Egypt. The emperor Trajan built and garrisoned the fortress to command the desert route to the Red Sea, and here Cyrus, the Byzantine Patriarch and Prefect, negotiated with 'Amr ibn el 'Aas, and betrayed his masters by selling the country to the invading hordes of Arabs—treachery which brought about the triumph of the Crescent over the Cross. Had Egypt not bowed to the sword of Islam, the whole East would have remained Christian, and events would have pursued a very different course.

Here, at the present day, one can still see the huge bastions towering over the southern gate of the fortress through which the successful army of the Arabs entered, led by their skilful general, who secured this commanding position even before attacking Alexandria, the capital of the country. The church of El Mo'allaqah, dedicated to the Blessed Virgin, in this fortress, is so-called because it is built "hanging" in the space between the two above-mentioned towers. Adjoining the church stands the new building containing the Coptic Museum and Coptic Library.

It was at the suggestion of Lord Cromer that a Committee of Preservation of Arab Art was constituted for the protection of all the monuments dating from the Early Arab period. Butros Pasha Ghaly then suggested that the monuments of the Coptic period should be included within its domain. At the same time, he pointed out to the Patriarch that all stray objects of art and of historical value should be collected and housed until the time should come for the formation of a museum for the Christian period. His idea was not only to preserve all objects of wood, metal and faience, but—of equal importance—all MSS. existing in monasteries and churches. These should be collected in Cairo and, together with the Patriarchal Library, should form a nucleus for a permanent museum, which would tend to diminish the sale abroad, and neglect or destruction at home, of many valuable antiquities.

Shortly afterwards a Committee was formed under the presidency of Markus Pasha Simaika, to whose untiring diligence the collection of funds, and indeed, the existence of the museum, was really due, and this Committee, with few changes, is still at work. The building was especially erected for museum purposes, and has had to be enlarged from time to time, as necessitated by the rapid growth of the collections. It is now a large series of fine rooms, roofed in with decorative timbering of the XIV–XVIth centuries, and contains the finest specimens of *mushrabieh* work. The walls are encrusted with beautiful old slabs of marble, and there are many old mosaic tiles collected from different sources.

The museum also contains some choice ivory carvings, and Fig. 1 shows a panel with an open lotus bud in the centre; it is of the utmost delicacy of workmanship and of the highest finish.

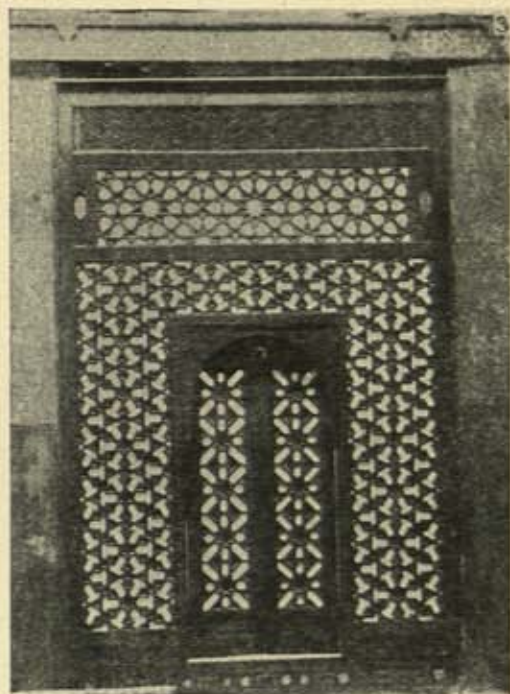
Fig. 2 is a door decorated with translucent panels of ivory, and the effect of the light shining through it must have been most impressive.

Fig. 3 is a window of woodwork and ivory in an iconostasis.

Fig. 4 is another carved panel of ivory, encrusted in cedar wood, in one of the screens.



1. CARVED IVORY PANEL OF LOTUS.



2. DOOR OF TRANSLUCENT IVORY.



3. WINDOW FRAME, IVORY INLAY.



4. PANEL OF IVORY INLAY.

The panel in the photograph (Fig. 5) shows a relief in carved wood of the Entry into Jerusalem; our Lord is represented as beardless. The Greek inscription above is a hymn. It is considered to be a IVth century work.

The museum also contains an interesting series of crosses of various centuries; amongst them one notices a cross mounted on a crescent, which dates from the Xth century.

Fig. 6 shows an ancient wooden altar, covered with a domed baldachin; it dates from about the IVth century. Of the same nature and about the same date, there is a most beautifully carved door which was found built up inside a wall, in the neighbouring church of St. Barbara.

There are also very good collections of embroidered cloths of different periods, and of icons representing Coptic and Greek saints, some of which are worth hours of study.

Of work in bronze, there are many decorative candelabra and lamps. A beautiful dome and a chair are among the latest and most important acquisitions of the museum.

The specimens of stonework are housed on the ground floor, and here one may see all sorts of steles, inscribed and dedicated to saints and private persons, or covered with the most intricate lacework, or sculptured with various symbolic motives and designs.

Manuscripts, as before mentioned, are well represented, from the simple but finely written earlier documents to the most richly and extravagantly illuminated ones of the Xth and XIIth centuries. Of MSS. and fragments on vellum, this museum contains a collection probably second only to that of the Vatican. It has lately been enriched by the collection procured by the late Evelyn White from the Dēr Abba Macarius, in the Wady en-Natrun, the publication of which, by the Metropolitan Museum of Art, has just appeared.

In the small garden of the Coptic Museum, one meets with the most impressive sight in the whole compound, for, to the left, one descends the staircase leading to the original level of the floor of the garrison, and sees, towering above one, the huge walls on either side of the original southern gate of the fortress.

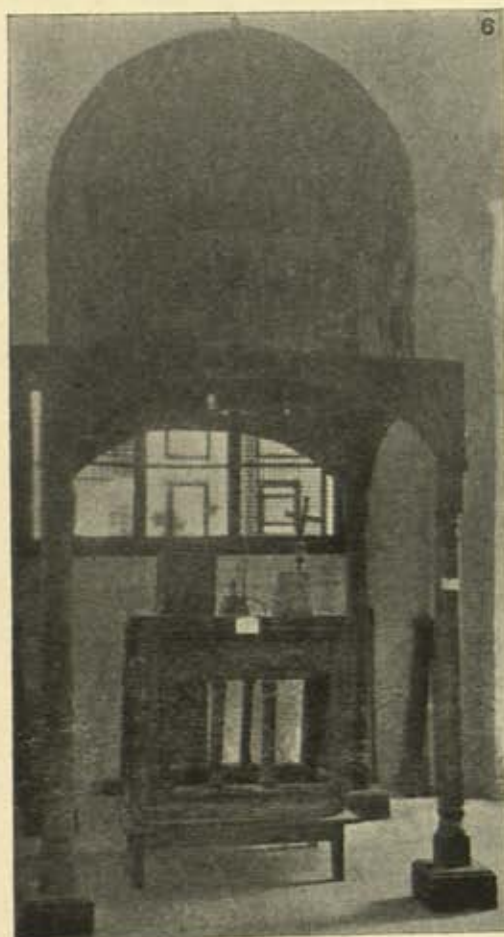
In the western side of the north hall, a richly carved wooden door leads into the Library. The first room contains an exquisite fountain, built in the centre of the floor and decorated with beautiful old coloured tiles. Standing against the walls, in this and the other rooms of the Library, are the elaborately worked cupboards of old Coptic style, containing the volumes.

The idea in founding the library was to collect all books, native and foreign, written about the Copts and their language and literature, their civilisation and history. It is increasing in size and utility, is open to the public, and forms a most valuable centre for the study of Christian Egypt.

The above short description shows how many treasures are contained in this fortress of Babylon at the present day, and yet very few of the thousands who annually visit Egypt even know of their existence. The tourists are dazzled by the monuments of pagan Egypt, to the neglect of the Coptic churches, yet the name of the Copts is in itself but an echo of the word Egypt. The ancient tongue of the Pharaohs is still being spoken every day in divine service within the walls of those neglected and hidden buildings. May it continue for ever!



5. PANEL SHOWING THE ENTRANCE OF OUR LORD INTO JERUSALEM.



6. CARVED WOODEN COMMUNION TABLE AND BALDAQUIN.



7. OUTER CENTRAL GATE OF THE FORTRESS OF BABYLON.

SMALL OBJECTS FROM NAQADEH.

IN 1899 Prof. Sayce, when visiting Naqadeh, found men digging out a grave, and bought some small objects from them. These conditions almost preclude any modern productions, as such would not be kept in a place which travellers rarely visit. As the grave contained two black-topped red jars, it was clearly pre-dynastic. With these small objects, in the upper part of the page, are a few rather larger pieces below, which also came from Naqadeh.

The remarkable detail is the repetition of an oval on Nos. 2 and 3, with a sign inside like a seated figure. This is not a cartouche, as there are no ends below, and no cartouche is known till the IIIrd dynasty. It might be an early form of the walled town sign, with perhaps a name sign within it.

No. 1 is a pin of copper or a round borer.

No. 2 is of black steatite, complete, with a hollow at the middle of the top, as if to unite it to another piece. There seems to be the falcon, and possibly a *nefer* sign, by the oval. The other signs are not intelligible. On the back, No. 2A, a crescent of white limestone is inlaid in the black steatite.

No. 3 is part of a large bivalve shell, with the oval, and an unknown sign.

No. 4 is an alabaster pendant, with two holes joining in the mass. The top has had the horned ends, also seen on slates. On the other side, No. 4A, is the figure of an animal and signs.

No. 5, a flat plate of slate, with bevelled edge, and middle hole for passing a bolt through to join this as part of a larger object.

No. 6, a plate of buff limestone, with peculiar outline, and a hole through it. A sign is cut on it.

No. 7, the feet of a built-up figure of grey steatite, with hands at the sides.

Nos. 8, 9, flat plates of slate for inlay.

No. 10, flat slips of slate and white limestone for inlay.

No. 11, base of a fossil echinus, with incised signs, two of which are known as prehistoric.

No. 12, thin slip of slate, with suspension hole.

No. 13, thin slip of slate, of outline like No. 6.

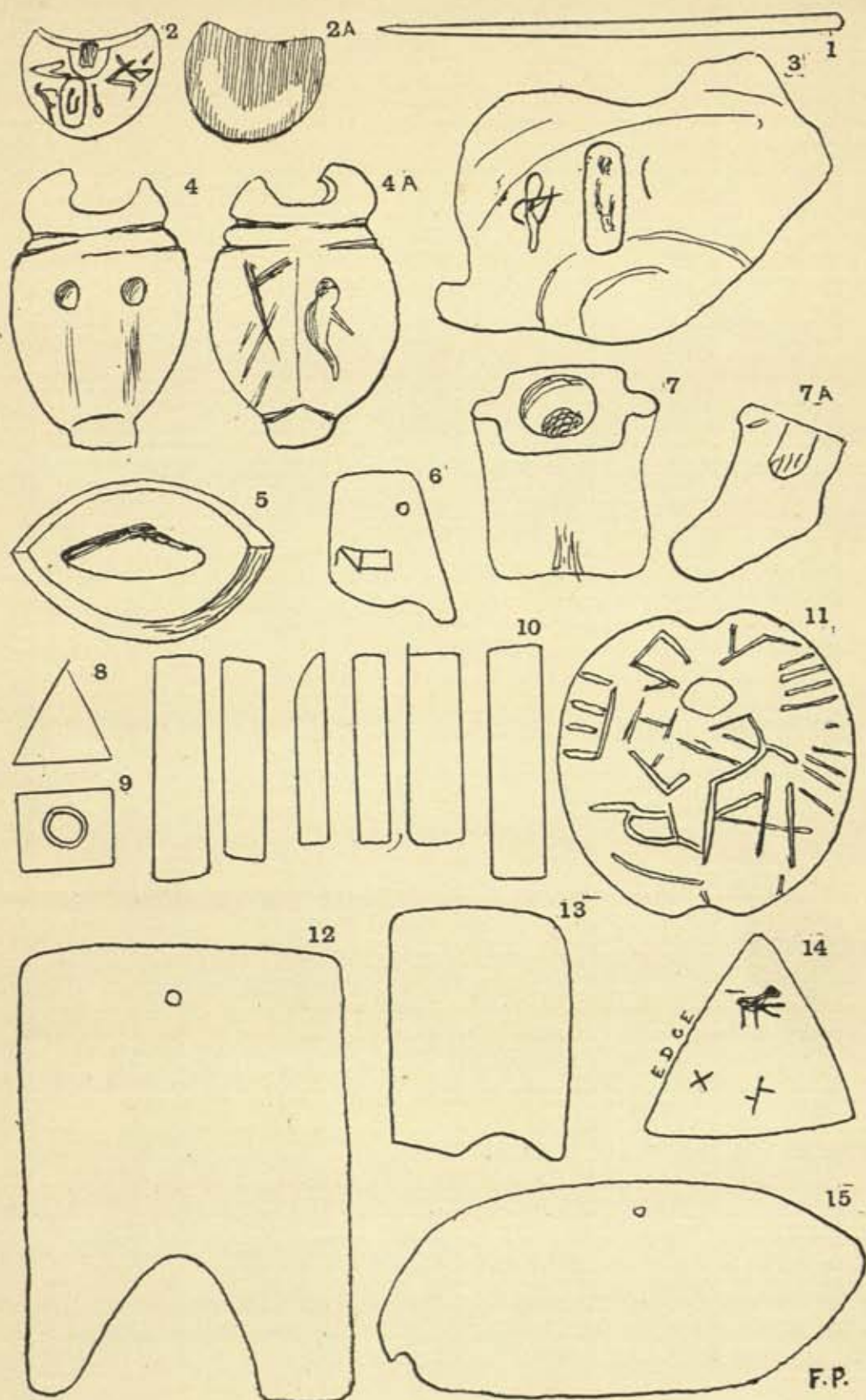
No. 14, piece of the edge of a thin alabaster saucer, with incised animal and two signs.

No. 15, thin slip of slate with suspension hole.

The black-topped jars have a rude figure of an animal incised on one, and on the other are palm trees incised on the inside of the jar, up the whole height.

I have to thank Prof. Sayce for permission to publish these interesting pieces, which are mostly new to us.

FLINDERS PETRIE.



NOTE ON PARABOLIC CONES.

PROFESSOR PETRIE recently called attention to the possible use of parabolic cones in the cylindrical clepsydra.¹ Such a cone would enable an equally divided scale to be used in an "outflow" clock in the form of a right cylinder of uniform diameter.

In the Egyptological Museum at University College are two portions of cones which Professor Petrie thought might have been used for the purpose, and he very kindly lent me the larger specimen in order that the necessary measurements might be made, to determine whether the section was or was not parabolic.

The specimen measures about 7 inches in length and tapers from a diameter of $5\frac{1}{2}$ to one of $3\frac{1}{2}$ inches. It was set up with the axis vertical in an aluminium ring on Vee-blocks above a horizontal surface plate and adjusted as accurately as possible. Vertical pencil lines—numbered 1, 1A, 2, and 2A—were marked, in order, on the surface in four positions at right angles. Diametral measurements made at these points showed that the horizontal sections at three levels were not truly circular. The greatest difference in diameter amounted to .254 inch, where the mean diameter was 4.7 inches.

Metal templates were then cut to fit the profile as accurately as possible at each of the four lines 1, 1A, 2, and 2A. These profiles were then transferred to squared paper and disposed about a nominal axis at distances corresponding to the diametral measurements. On the assumption that the curves so obtained formed part of a parabola, the axis was determined by construction (by the two-chord method) on the section of maximum diameter. The focus was found by a tangent construction, and thus the vertex and directrix.

The constant of the parabola was determined by measurements of values of x and y for two points on the curve, and the mean (.1815) of the two values obtained (.181, .182) was used to construct the parabola $y^2 = 4 \times .1815 \times x$.

The curves corresponding to the vertical sections of the specimen and the theoretical parabola were drawn out on tracing paper so that they could be conveniently compared by superposition.

It may be stated that, allowing for the inequalities of the surface of the fragment which might affect diametral measurements and slight errors in the cutting of the templates, the surface does approximate so very closely to the parabolic form as to lead to the conclusion that it is possibly intentional.

Unfortunately it is not possible to date the specimen. If it is Graeco-Roman, it seems possible that attempt has been made to reproduce a parabolic form in stone. If this is the case, it would probably have been effected as follows: The architect would draw out the plan in the same way as the plans of the columns recorded at Philae.² Templates would be provided (in thin sheet metal or other material) for the use of the stonemasons, who would smooth down the stone until the templates everywhere fitted.

¹ See ANCIENT EGYPT, 1924, Part II, p. 50.

² See *Zeitschrift für Aeg. Spr.*, 1896, Vol. XXXIV, pp. 69 to 76 and Plates III to VI.

If this specimen was used—as Professor Petrie thinks—in connection with a cylindrical clepsydra of the outflow type, the small characteristic would have necessitated a vessel at least 17 inches high on a base of 7 inches. The only cylindrical clepsydra found up to the present was discovered at Edfu,¹ and, judging by the form and style of decoration round the rim, dates from A.D. 100 to A.D. 200.

So far as I am aware, there is no direct evidence of knowledge of parabolic curves earlier than Greek times. Menaechmus (*circa* 360 B.C.) appears to have been the first to discuss the properties of the parabola and, like so many Greeks, he probably found in Egypt at least the raw material on which he based his theoretical investigations. The impact of the restless, inquisitive, alert Greek mind on the civilisation of Egypt is a fascinating problem and largely untouched ground.

From what we know of the mind of the ancient Egyptian, it seems likely that he would have discovered the practical application of some sort of cone in a clepsydra by experiment in the first instance. It is a very far step to the application of a paraboloidal cone to such a complicated problem as the rate of flow of a liquid from a vessel in the form of a right cylinder.

It would be of interest if other examples of curved cones could be brought to notice and investigated. A detailed study of architectural curves, too, both ancient Egyptian and Greek, might provide some useful data bearing on the earliest practical use of parabolic forms.

R. W. SLOLEY.

THE lesser cone, which may have been used in a clepsydra, is cast in plaster, 2.4 inches wide at the base and 3.9 inches high. It is hollow with sides 0.5 to 0.6 inches thick. The outside varies between a conic and a parabolic outline. It is obviously truncated in design, and the simplest way to regard the frustrum of such a figure is to take the square of the radius as proportional to the height. Then, these being proportionate, the differences of the various stages one from the other will also be proportionate. The average of such proportions, therefore, will give the scale for determining the apex of the whole parabola.

Thus, comparing the height and diameter at five different levels, we find that the deviations from the measurements, taken to the nearest hundredth of an inch, are :—

Parabola	or	Cone.
— .009		— .026
— .004		+ .004
+ .021		+ .034
— .003		+ .004
— .007		— .016
<hr/>		<hr/>
means	.009 inch	.017 inch.

Thus the form agrees to a parabola with only half the variation from a mean cone. The design, therefore, seems to have had the parabolic form in view, though a cone would give practically the same result for a clepsydra.

FLINDERS PETRIE.

¹ See ANCIENT EGYPT, article "Ancient Clepsydrae," *loc. cit.*

MARKING-INK IN ANCIENT EGYPT.

THROUGH the kindness of Dr. Alexander Scott, Director of the Research Laboratory of the British Museum, I have had the opportunity of making a microscopical examination of the name on the margin of a winding-sheet of Zehuti-sat (B.M. Exhibit 37105), and of applying micro-chemical tests to the pigment attached to the fibres.

These brownish characters are stated by Sir Ernest Budge in the Second Edition (1925) of his book *The Mummy* to consist of indelible ink. "It is worthy of note," he writes (p. 217), "that Egyptian ladies marked their linen with indelible ink; see the winding-sheet of Tchehuti-sat (B.M. 37105)."

It has been established by Mr. A. Lucas (*Analyst*, 1922, 47, 11) that it is quite possible for carbon inks made from impure lampblack to become brown with age, and many examples of this change have been noted on old papyri. Yet even after such an alteration, an ink of this type would be "indelible" as regards the action of light and air, though, unlike the modern indelible marking-inks, it might be easily removable by rubbing or other mechanical treatment.

The tests which I applied, however, have shown that the pigment on this winding-sheet is not a carbon ink, for it can be readily and completely bleached. Iron-gall inks, as we know them to-day, were unknown to the ancient Egyptians, and, as I anticipated, there was no trace of iron or copper in the pigment.

The characters appear to have been made on the fabric by means of an organic brown pigment, which may have been of the nature of bistre free from any particles of carbon. It was probably applied as a paint in a manner analogous to that used for stencilling textile fabrics at the present day. At all events, the evidence does not support the conclusion that it is an "ink," and as its permanence is only relative, it should not be termed "indelible" without a qualification as to the meaning of the adjective.

C. AINSWORTH MITCHELL, M.A., F.I.C.

THE SISTRUM OF ISIS.

THE altar which is shown on Figure 1 is in the Musée Lapidaire of Nîmes. It is figured and described by Espérandieu in *Recueil général des bas-reliefs, statues et bustes de la Gaule romaine*, Vol. I, No. 496. It is 1.05 m. in height. The inscription reads as follows: Lunae et Isid(i) aug(ustis) sacr(um) C. Octavii Pedonis lib(ertus) Trophimio sevir aug(ustalis) v(otum) s(olvit). The floral



1. ALTAR TO LUNAR AND ISIS. NÎMES.

scroll is, in reality, continued down both sides of the altar, but is not shown on the right side of the photograph. It is interrupted above the inscription by a crescent moon and a sistrum, the attributes of the Moon and Isis respectively. The altar is described as careful work of the 1st century.

The monument is an interesting example of the development of syncretism in Roman times, and may be looked upon, perhaps, as a step towards the pantheistic conception of Isis which is expressed in the pantheistic bronzes, several of which have been found in the Rhineland. Some of the bronzes in which the sistrum of Isis occurs are illustrated in this article.

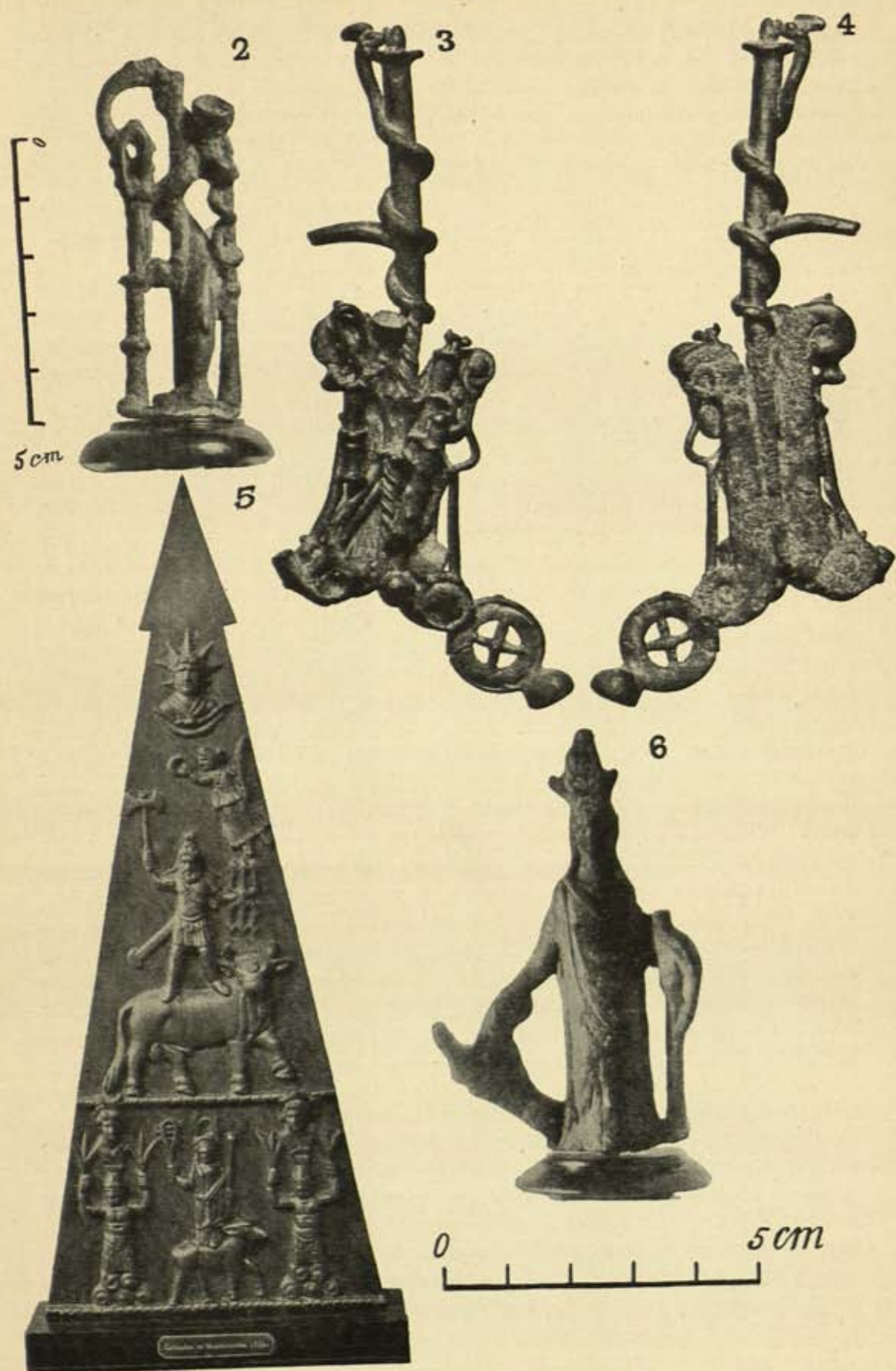
Pantheistic bronzes may be divided into three classes:—

1. Those in the nature of a *tropaion*, in which the symbols are grouped round the main object, such as the lance of Mars or the club of Hercules.
2. Votive hands, which are generally dedicated to Sabazius.
3. Those in which a main deity is portrayed, round whose symbol the attributes of the other divinities are grouped. (B.M. Venus Panthea, No. 829, Fig. 7, is an interesting example of this class, although in this case there is no sistrum.)

The pantheon which is illustrated in front view in Fig. 2 was probably found at Cologne; it is now in the Provinzial-Museum, Bonn. The central object, which is incomplete, is probably the lance of Mars. Round it coils the dolphin of Venus; to the left is the quiver of Diana; above this, the sistrum of Isis, and behind the sistrum, the pedom of Pan; to the right is the club of Hercules, above it the cornucopiae of Fortuna; behind the cornucopiae is an object which, being incomplete, cannot be identified; it may be the chopper of Silvanus.

A more elaborate specimen (Figs. 3 and 4) was found at Kastell, near Mayence, in 1912. It is now in the private ownership of Dr. Fritz Fremersdorf, Keeper of the Department of Roman Antiquities in the Wallraf-Richartz Museum, Cologne¹. In this example, the rudder of Fortuna is the central object. (The rudder is best seen in Fig. 4, which gives the back view; in Fig. 3, the front view, it is more or less hidden by the other symbols.) Round the rudder coils the serpent of Aesculapius. The attributes which are grouped round it may be apportioned as follows: the thunderbolt of Jupiter (below the serpent); on the left, the sistrum of Isis, the cornucopiae of Felicitas, the flat sacrificial bowl of Juno, the quiver of Diana, the thyrsus of Bacchus, the pedom of Pan (a curved knotted stick), and a small bowl, perhaps representing Liber. On the right side are placed the torch of Ceres, the cymbals of Cybele, the tongs of Vulcan, the club of Hercules; below these is the open mirror of Venus. There is also the plectrum of Apollo. The range of gods is a wide one. It could be restricted by assigning more than one attribute to one and the same god, as, for instance, the cornucopiae and rudder to Fortuna, but this would seem contrary to the purpose of a pantheistic monument, which presumably aimed at including as many gods as possible. Four objects remain unappropriated: the hammer (below, at the extreme left), the ball (below the club), and the wheel, and base at the extreme right. Dr. Fremersdorf is unable to dispose of the ball and base conclusively, but suggests native gods for the wheel and hammer, since Jupiter and Vulcan are already represented by the thunderbolt and tongs respectively.

¹ F. Fremersdorf, "Eine pantheistische Bronze aus Mainz," *Bonner Jahrbücher*, 129 (1924), pp. 128-135.



PANTHEISTIC MONUMENTS. RHINELAND.

There are several instances of a Celtic hammer god, and also of a Rhineland divinity with a wheel (the "Celtic Jupiter"). If this suggestion be correct, we have in this monument one more instance of the "mysterious night" which lies concealed beneath the beams of the "Interpretatio Romana." In spite of the diversity of symbols on this bronze, several important ones are missing, such as the lance of Mars, the palm of Victory, the trident of Neptune, the shepherd's staff of Mercury and the symbols of the Sun and of Minerva. No single pantheon known includes all the symbols; the choice presumably depended on the cults in the place of origin.

It is impossible to say whether the Mayence bronze is a *tropaion*, or whether it was once accompanied by a deity who has now disappeared. As the symbols are only visible from the front, the object would, in the latter case, have been held in the right hand. Fortuna holds the rudder in the right hand almost without exception, but the deity might also have been Isis or Venus (*cf.* B.M. Venus Panthea, Fig. 7, where the main object is a rudder).

Pantheistic bronzes have been discussed at length by Weisshäupl¹ who concluded that they were in every case dedicated to one particular divinity, above all to Isis, on whom the powers of all the other gods were "projected." This conclusion derives the fullest support from a limestone altar which was found at Galesano, in southern Istria, and is now in the Pola Museum. The altar bears a number of divine symbols on the face and sides, and it is definitely dedicated to Isis, as there are two lines of inscription above and below the symbols on the face, reading: *Isidis imperio Q. Lutatius Iucundus*. Some of the symbols are too much damaged to be recognised; amongst those which are recognisable may be mentioned the following: sistrum, crescent moon, situla, blades of corn, phallus, a bird (goose?), syrinx, rudder, thunderbolt, hammer, tongs, cymbals, a double flute, shallow bowl, serpent coiling round a staff, dolphin, trident, and two crossed double axes. A winged and naked boy carries a torch in one hand, and with the other holds a dog on a leash. Most, if not all, of these attributes may be found in association with Isis on other monuments; for instance, serpent, dog, double flute, syrinx, corn, winged boy and bird are to be seen on the ivory panel in the cathedral at Aix-la-Chapelle (ANCIENT EGYPT, 1926, Part IV, p. 101). Sistrum and double axe may both be seen on the bronze votive tablet to Jupiter Dolichenos, which was found at Heddernheim, and which is now in the Wiesbaden Museum (Fig. 5). This bronze is particularly instructive as regards syncretism in the time of the Middle Empire. Hovering over the principal god is a Nike with wreath and palm. On other monuments, Dolichenos is sometimes accompanied by a female divinity, also mounted on some animal, but in this case, the goddess is relegated to the lower register. This curious scene has not been satisfactorily explained as yet; the goddess stands on a donkey, and holds a sistrum in the right hand and a torch or sceptre in the left; she appears to be Isis Panthea.

We have followed the sistrum of Isis into strange company, and have wandered far from the ancient Egyptian conception of the deity. Some of these symbols were transferred to her from a very large circle of Graeco-Roman gods, with whom she became equated, or whose qualities she came to possess. She developed, in fact, into the goddess, Isis Myrionymos, Isis Panthea. In support of this statement may be quoted a Soissons altar dedicated to Isis Myrionyma

¹ R. Weisshäupl, "Pantheistische Denkmäler," *Jahreshefte des oesterreich. archäolog. Instituts* (1910), Vol. XIII, pp. 176-199.



PANTHEISTIC GROUP WITH VENUS.

(*Isi myrionymae et Serapi exspecta[ta Her]metis Aug. d[isp] v.s.l.m.*) also by a bronze statuette of Isis Panthea which was probably found at Cologne and is now in the Provinzial-Museum, Bonn (Fig. 6). In the statuette the goddess wears the headdress of Isis and a long dress and cloak; in her right hand she holds a rudder, in her left, an object which was doubtless, when complete, a cornucopiae.

So much for the pantheistic conception of Isis as revealed by the monuments, which show that Isis, more than any other deity, came to be looked upon as the great mother-goddess whose essence was worshipped under many names. Literary evidence of this fact is given by Apuleius (*Metamorph.* XI, 2, 5). Lucius invokes Isis in these words: "Queen of Heaven, whether thou art the genial Ceres, the prime parent of fruits, who, joyous at the discovery of thy daughter, didst banish the savage nutriment of the ancient acorn and, pointing out a better food, dost now till the Eleusinian soil; or whether thou art celestial Venus who, in the first origin of things didst associate the different sexes, through the creation of mutual love, and having propagated an eternal offspring in the human race, art now worshipped in the sea-girt shrine of Paphos; or whether thou art the sister of Phoebus, who by relieving the pangs of women in travail by soothing remedies, hast brought into the world multitudes so innumerable, and art now venerated in the far-famed shrines of Ephesus; or whether thou art Proserpine, terrific with midnight howlings . . . by whatever name, by whatever ceremonies and under what form it is lawful to worship thee, do thou graciously, etc." The goddess replies: "I . . . am Nature, the parent of all things, the mistress of all the elements, the primordial offspring of time, the supreme among divinities, the queen of departed spirits, the first of the celestials, and the uniform manifestation of the gods and goddesses; who govern by my word the luminous heights of heaven, the salubrious breezes of the ocean and the anguished silent realms of the shades below; whose one sole divinity the whole orb of the earth venerates under a manifold form, with different rites, and under a variety of appellations. Hence the Phrygians, that primeval race, call me Pessinuntica, the Mother of the Gods; the aborigines of Attica, Cecropian Minerva; the Cyprians in their sea-girt isle, Paphian Venus; the arrow-bearing Cretans, Diana Dictynna; the three-tongued Sicilians, Stygian Proserpine; and the Eleusinians, the ancient goddess Ceres. Some call me Juno, others Bellona, others Hecate, others Rhamnusia. But those who are illumined by the earliest rays of that divinity, the Sun, when he rises, the Aethiopians, the Aarii and the Egyptians, so skilled in ancient learning, worshipping me with ceremonies quite appropriate, call me by my true name, Queen Isis." (Transl. Bohn's Libr.)

Her invocation as *una quae es omnia dea Isis* could hardly be more beautifully or convincingly expressed. The earlier and simpler ideas concerning the goddess found expression in a monologue which was placed in her mouth. It has been preserved in three versions, all of which were based on the same prototype. The shortest of the three is given in *Diod.* I, 27, from the report of a historian of a stele on the tomb of Isis in Nysa in Arabia; it runs as follows: "I am Isis, queen of the whole earth. My teacher was Hermes. What I have established as law, no man can undo. I am the eldest daughter of the youngest god Cronos. I am the wife and sister of King Osiris. I am she who first found corn as food for man. I am the mother of King Horus. I am she who rises in the dog-star. The town of Bubastis was built in my honour. Hail to thee Egypt, who nourished me!"

The second version is on the island of Ios, and is a prose inscription of the IInd—IIIrd century A.D. It reads thus: "I am Isis, the ruler of the whole land. Hermes was my teacher, and with Hermes I invented the writing of the people so that everything should not be written with the same letters. I gave laws to mankind and established what no one can alter. I am the eldest daughter of Cronos. I am wife and sister to King Osiris. I am she who rises in the dog-star. I am she who is called a goddess by women. The town of Bubastis was built in my honour. I am she who separated heaven from earth. I showed the stars their path. . . . I discovered navigation. I brought men and women together. I caused children to be loved by their parents. Together with my brother Osiris I put an end to cannibalism. I have taught mankind the mysteries. I have caused honour to be shown to the images of the gods. I have established the temple districts of the gods. I have destroyed the ways of government of tyrants. I have caused men to love women. I have made Right more powerful than gold and silver. I have caused Truth to be considered beautiful." (*C.I.G.* XII v, i, p. 217).¹

In Fig. 1 the sistrum and the moon are given equal importance. It is curious to find the sistrum disappearing later, whilst the moon waxes, particularly as the moon had nothing to do with Isis originally. When mythological speculation made Osiris the sun, Isis became the moon. She is invoked in the name of Moon (*Diod.* I, 11, 25; *Plut. de Isid.*, cap. 52, 43; and elsewhere.) The identification was helped by a misinterpretation of her ancient headdress; the cow's horns were thought to be a crescent moon. *Apul. Metamorph.* XI, 3, compares the *plana rotunditas*, really the sun's disk between the horns of a cow, with *argumentum lunae*.

The favourite Graeco-Roman theme of mother-goddess and child strongly influenced the conception of the Virgin and Child, and it is not always possible to be sure whether a representation of a mother holding a child is intended for Isis or Mary. This being so, it is not, perhaps, over-fanciful to consider the crescent moon on which carved, sculptured, or painted Virgins so often stand as a survival of the older cult, representing in the time-honoured way the triumph of Christianity over paganism. (His enemies under his feet as on the soles of Egyptian mummies.) *Plus ça change, plus c'est la même chose* in pictorial methods of expressing ideas: a serpent under the feet represents paganism in early representations of the Crucifixion. Roman Emperors were shown riding down their enemies who were represented as animals (*cf.* another ivory panel in Aix cathedral, where the animal in question is probably the lynx of Gaul). On the other hand it is, of course, possible that the ancient church boldly appropriated a dangerous symbol, in pursuance of the wise policy by which it changed heathen gods into Christian saints. Paganism died hard, or lived on under another cloak, and it is by no means impossible that St. Anne in another favourite group, namely the Virgin and Child with St. Anne (the group is called *Anna Selbdritt* in German), may represent a heathen goddess who was too deeply rooted in the affections of the people to be left out of account.

L. B. ELLIS.

¹ Pauly-Wissowa, *Real Encyclopädie* 1916, Vol. IX, 2, 2114.

REVIEWS.

Fishing from the Earliest Times. By W. RADCLIFFE. 2nd edition. Large 8vo. 494 pp., 59 illustrations. 1926. (Murray.) 21s.

That Mr. Radcliffe's book should have reached a second edition in so short a time is proof of the excellence of the work. He divides his subject geographically; Greece and Rome are taken together and occupy rather more than half the book; then come in order Egypt, Mesopotamia, Judaea, and China. In the Introduction there are, besides an account of palaeolithic representations of fish and of neolithic fishing implements, some facts about fishing in ancient India and among the Celtae. The book contains a mass of information, not merely on fish and fishing, but on the manners and customs of the people concerned, illustrated by quotations from contemporary writings. The Egyptian section contains practically everything that is known at present of the art of fishing among the ancient inhabitants of the Nile Valley; for, as the author remarks, "to Egypt belongs the glory of holding in future and happy thrall world-wide subjects, who salute her as the historical mistress and foundress of the art of Angling." In proof of this statement he quotes Newberry's *Beni Hasan* (Vol. I, Pl. XXIX) and Wilkinson, Pl. 371. He notes, however, that actual "examples of Spear-Harpoons are found in Egypt much earlier than those of either the Net or the Hook." As regards the fish-hook, he points out that even the earliest known Egyptian hooks are very far removed from the primitive: "the Hook, fashioned in no rude method, and wrought of no inflexible material, but of *copper*, makes its appearance" at the end of the predynastic period. "From this it is clear that Egypt (*a*) can lay no claim to have invented this method, and (*b*) had travelled many stages on the long road of piscatorial invention. The complete absence in the Nile Valley of hooks of bone, flint, or shell which occur in so many neolithic centres in other parts of the world adds confirmatory evidence." Since this book was written, a shell fish-hook was found at Badari. He has several paragraphs to explain the passage from Chapter CXXV of the Book of the Dead, which is clearly mistranslated; his quotation runs: "I have not caught fish with bait made of fish of their kind," where he has omitted the brackets by which Sir Ernest Budge has attempted to make sense of a misunderstood passage. The sentence must, as the possessive pronoun shows, be taken in connection with the clause immediately preceding; the two are clearly parallel phrases, and the *ḥꜣt* must be translated in the same way in both, either as the preposition "for" or as the genitive "of" or "belonging to." In the first phrase the harpoon-sign does not read *ḥꜣt* "bones" in this case, but *gnw* "records," i.e. recorded land; in the second phrase *ḥꜣt* is not "dead bodies" but "lagoons." The whole sentence would then run: "I have not snared birds belonging to the recorded lands of the gods, I have not caught fish belonging to their lagoons." This gives very good sense for the purpose, which was to show that the speaker had not committed any ecclesiastical crime. The tabu on eating fish is discussed by Mr. Radcliffe

at some length ; it appears to have belonged to the king, the priests, and some of the upper classes, but was not practised at all by the generality of the populace. I would suggest that fish-eating was the common practice until the introduction of Osiris-worship, for judging by modern usage it survived in the centres of the Seth cult and among the commonalty generally. At Naqada, originally one of the chief towns of Seth-worship, fishing with nets is still one of the staple industries, and is so successful that the inhabitants say that when a fish starts to swim down the Nile from Aswan to Cairo it goes along quite happily till it reaches Luxor, and there it begins to pray to God to save it from the nets of Naqada. The rest of Mr. Radcliffe's book is concerned with fishing in other ancient countries, with which in this review I have nothing to do, and can therefore only remark that the high level of accuracy is maintained. The book is written in a lively and readable style interspersed with racy stories and witty remarks ; the illustrations have been chosen with care and are well reproduced. Altogether a book to be recommended.

M. A. M.

La Magic dans l'Égypte antique. By FRANÇOIS LEXA. 3 vols. 8vo. 220 × 235 pp., 71 pls. 1925. (Geuthner.) 200 frs.

This book is avowedly written for the instruction of occultists, or perhaps it would be better to say that it is an attempt to give a more scientific turn to occultism. It is impossible, therefore, to treat it as a serious effort to extend our knowledge of ancient Egypt, except among a very limited public. The introduction, for example, takes up twenty pages, in which the views of the principal Egyptologists, ancient and modern, on the subject of Egyptian magic are set out. The author's own views, with elementary explanations of the possible origin of magical rites, are also given at length. In his further exposition of the subject he ranges from inscriptions in tombs of the Old Kingdom to the Magical Papyrus of London and Leyden, which dates to within the Christian period, without any indication whatsoever of difference in time. With the material in his hands, he has lost the opportunity of giving to the world an account of the development and changes of magical ideas in Egypt, which would have been of value both to the scholar and the general reader. As it is, he has fallen into the snare which entraps so many writers on ancient Egypt, of appearing to consider that everything which happened in the centuries before Christ occurred at the same time without any sequence or development. The chronological sense is as yet undeveloped in many writers ; yet for both student and non-student it is the essential basis. There are certain fundamental mistakes also. In the sentence, "les chrétiens égyptiens acceptèrent l'écriture grecque, complétée par quelques signes hiératiques pour les voyelles qui ne se trouvaient pas dans la langue grecque," there are three distinct and separate mistakes. In the first place, Egyptian written in the Greek character was in use before Christianity came into Egypt ; secondly, the supplementary signs are taken from demotic and not from hieratic ; thirdly, those signs are, without exception, consonants and not vowels. Again, in his account of the relation between magic and religion, where he explains the meaning of the offering formula, he entirely omits the fact that a god's name is invariably included in the early texts, for this would invalidate his argument. One good point of the author's work is the great mass of Coptic material which he has brought together in a form easily accessible to the general reader. Few people realise how much of the ancient ideas and ritual continued among the converts to Christianity

and their descendants, and Dr. Lexa has succeeded in showing this continuation very clearly. The atlas of plates contains some interesting photographs of the lesser gods and lesser-known amulets, though here again an indication of their dates would have added to their value.

M. A. M.

L'Écriture Égyptienne, essai sur l'origine et la formation de l'une des premières écritures Méditerranéennes. By EDOUARD NAVILLE. 143 pp. (Paul Geuthner, Paris.) 30 frs.

Dr. Naville's reasons for writing this book are set forth in the preface, where he maintains that writing originated in drawing, and that it was only by degrees that a drawing obtained a syllabic, and then, in some cases, an alphabetic character. He puts forward two further statements: one, that Egyptian writing was always figurative, and the other, that the German method of transliteration is wrong, because it gives groups of signs which are impossible to pronounce. In the body of the book he develops all these propositions, his argument being that the modern method of studying ancient Egyptian is based upon our knowledge of Semitic languages and that no allowance is made for the fact that it was a spoken and therefore an ever-changing language, which varied in different parts of the country. Here he is unfair to the very latest ideas on these subjects, for it is now recognised that there are other elements besides Semitic in Egyptian, and also that our knowledge of the ancient dialects, which no doubt existed, is as yet too slight for any definite statement, though a considerable amount of work is being done. But all readers will be in accord with the author when he points out that the Egyptian script, in common with that of many other countries, originated as pictures of objects, which gradually lost their pictorial value and became merely signs for the associated sound; these signs were then used as groups of letters to spell out words of entirely different meanings. The author is strongly of opinion that vowels were written in Egyptian, and it is refreshing to find him running a-tilt against the rigidly academic methods of the German school and arguing that the hieroglyphs represent a living spoken language. The book has considerable value for this reason, besides the merit of being written by a scholar who had devoted nearly sixty years of a long life to the study of Egyptology.

M. A. M.

Deux grandes découvertes archéologiques en Corée. By S. UMEHARA. (*Revue des Arts Asiatiques*.) 1926.

This contains a further account, illustrated, of the royal tombs of Korea. They are of two types; a wooden chamber with entrance from the top of the tumulus, and an arched brick chamber with side entrance. The former type is the richer in contents. Objects that are dated range from 85 B.C. to A.D. 52. Lacquered wood has been considerably preserved; the cover of a bowl has a long inscription stating the contents, and the names of seven artists who took part in making it, 4 B.C. There is no such personal record in any other land. Another tumulus opened by Mr. Umehara had a tall crown of gold, ear-rings, belt-fastener, and armlet, all minutely wrought in gold: over a hundred vases of pottery, and others of silver, gilt copper and lac. All discoveries are preserved in the National Korean Museum.

F. P.

JOURNALS.

Zeitschrift für Ägyptische Sprache. Vol. LXI, 1926.

WRESZINSKI, W.—*Bäckerei*. This is a discussion of the various scenes showing the preparation of bread and cakes from grain. Some of these scenes cannot be explained, but it is suggested that one of them (*Ti*, 83), depicts the rising of the dough before the loaves are kneaded. The raising agent employed was presumably Iceland moss, large quantities of which were found at Deir el Bahri.

SCHARFF, A.—*Vorgeschichtliches zur Libyerfrage*. Four prehistoric vases are published in this article; also a bowl in the Golenischeff collection. The vases are recent additions to the Berlin Museum. The writer considers that one of the earliest representations of the Set animal may be found on one of them. The following arguments are urged in favour of a connection between the Naqada culture and Libya:—(1) The likeness between the dogs on white-lined pottery and the hounds with Libyan names on the stele of King Antef. (2) The presence of the Libyan phallus sheath on vases and ivories. (3) The Libyan god ꜥꜥ, is a form of Set, lord of Ombos. (4) The identification of the word *bꜥ* on the stone vases of Kho-sekhem with the Libyan place-name *bꜥ*, which is to be sought in the neighbourhood of El Kab. (5) The distribution of certain flint arrow-heads from Mauretania and Algeria across the oases to Naqada and Nubia. (6) A similar distribution of a certain type of stone vase, shaped like a truncated skittle with a wide base.

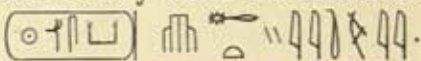
BORCHARDT, L.—*Jubiläumsbilder*. (1) A revised reconstruction of some fragments of the Sun temple of Abu Gurob shows that the scenes were incorrectly described in a previous publication, and that they represent, in reality, the *Sed* festival of Ra·en·User. (2) In the temple of Khonsu, built by Rameses III at Karnak, the building material was taken from older temples. On some thirty-two of the blocks re-used in this way are scenes depicting the *Sed* festival of Amenhotep III, of which the temple at Soleb contained the only representation hitherto known. The most likely source for these blocks would be the great temple of this king which once stood near the Colossi.

SCHÄFER, H.—*Die angebliche Basilikenhalle des Tempels von Luksor*. In this article Schäfer reaches the same conclusion which was expressed by Engelbach in *ANCIENT EGYPT*, 1924, Part III, namely, that the Colonnade at Luxor Temple represents the original plan, and was not the hastily-finished central portion of a basilica which was planned but never completed. Schäfer holds that the Colonnade was a vestibule, comparable with those at Soleb and Sedeinga, so that the form of its ground plan in the time of Amenhotep III and of Tutankhamen entitles the temple to be placed in a series of contemporary buildings. With its two rows of columns, such a vestibule admirably served its purpose of leading the worshipper up to the inner sanctuary. The earliest example of the use of a basilica to emphasise the processional route in a temple would then be the Great Hall at Karnak.

ROEDER, G.—*Rameses II als Gott*. The monuments which form the subject matter of this paper are now in the Hildesheim Museum. If, as is assumed, this find actually came from Horbêt, a military colony must have existed there in the time of Rameses II. In this station, four statues of the Pharaoh received the largest share of worship, and thus testify to the deification of the monarch in his lifetime and within Egyptian territory. The most remarkable sculpture shows Rameses II rewarding an officer named Mes with gold ornaments; on the lower part of the stone, the king, standing near his statue, throws necklaces to "the army," which is represented by a few soldiers, who are drawn with great freedom of line. Several votive stones were evidently made for stock, as the place for the names was left vacant.

SETHE, K.—*Ein Prozessurteil aus dem alten Reich*. Berlin Papyrus 9010 contains the judgment given in an Old Kingdom lawsuit. The litigants are the eldest son of the deceased, and a man who claims to have been appointed his trustee in the interests of all the children. The verdict suggests that the normal procedure in the Old Kingdom was for the eldest son to inherit unless the testator had made a will otherwise.

SETHE, K.—*Zu der enklitischen Negation w*. The use of the enclitic negative explains certain passages, in the Pyramid texts and elsewhere, which have not been completely understood hitherto. Any doubt as to the correct interpretation of this particle is removed by the presence of \neg after the *w* in *Pyr.* 815.

WILLIAMS, C. RANSOM.—*The Cylinder Seal of a King Userkerē*. A cylinder seal in the possession of the New York Historical Society bears the cartouche of a king of Upper and Lower Egypt, . Unfortunately, the second cartouche is not given, and the seal does not, therefore, help to solve the problem of King Khenzer (Petrie, *History I*, p. 245).

BISSING, F. VON and BLOK, H. P.—*Eine Weihung an die sieben Hathoren*. Prayers to the Seven Hathors and figures of the goddesses are carved on the remains of a rectangular slab in the Scheurleer Museum at the Hague. Four of the figures are preserved whole, the fifth and sixth in part, whilst the seventh has disappeared entirely. The prayers are for one Amenemhat, a "veritable first priest of Thoth." The sculpture may be assigned to the New Kingdom, and is the earliest dedication known to these goddesses.

STEINDORFF, G.—*Ein ägyptisches Grab in Siwa*. The rock tomb described in this article was one of those seen by the writer in 1899–1900. It is that of an Egyptian priest, Pa-Thoth.

WOLF, W.—*Über einige Waffen im Berliner ägyptischen Museum*. An almost unique ceremonial axe is described and illustrated, which was acquired by the Berlin Museum in 1925. The head is bound to the shaft by means of plaited leather straps. The head is not solid, but shows a lion chasing an antelope in open work. The only similar specimen known to the writer is in the British Museum (*Tools and Weapons*, Pl. 2, 91 = *Archaeologia*, LIII, 90), though similar axe-heads are not unusual. This type of axe was used in the wars of Thothmes III and survived as the standard ceremonial axe after it had been superseded in use. Two 'wn·t clubs in the Berlin Museum are also described and

illustrated. Their ends are covered with coloured barks arranged in patterns. It is suggested that the patterns on similar objects (clubs and bows) should be carefully investigated, and that the barks used in them should be examined botanically in the hope of ascertaining the place of origin of this technique.

KLEBS, L.—*Der ägyptische Seelenvogel*. In the Middle Kingdom the soul was supposed to live on in the form of a bird, namely, the heron, stork, swallow, and peewit, which are migrants, and in the falcon and goose, which are not. The earliest soul-bird of all is the *ꜥh*, which the writer believes to be *Scopus umbretta*. This bird, which flies at dawn and sunset only and builds a three-roomed nest, would seem particularly suitable to embody the spirits of sun-worshipping kings.

DÉVAUD, E.—*Coptica*. (1) *Sur la substitution de σ à x en bohairique*. As a general rule, σ replaces x in Boheiric for Egyptian g, k, or d when followed immediately by l, n or r. (2) *Sur les mots coptes oxi (B) et uorx (S.A l.B.) et leurs correspondants égyptiens*. In Egyptian and Coptic alike, one and the same word serves for "justice" and "truth" (in Egyptian *mꜥ*, *t*, in Coptic *ue* (S), etc.). As regards words meaning the opposite, 'd serves for both "injustice" and "lie" in the New Kingdom. In demotic, however, a new word, *nꜥd*, "lie," makes its appearance in place of 'd in this meaning, and in Coptic *oxi* means "unjust" only, whilst the word "lie" is rendered by *uorx*.
L. B. E.

NOTES AND NEWS.

THE work of the British School at Gaza is fully dealt with in the article by Prof. Petrie in this number. The party engaged in those excavations were Prof. and Lady Petrie, Mr. and Mrs. Starkey, Dr. Parker, Mr. and Mrs. Risdon, and Mr. Harding.

Mr. Howard Carter and his able assistants continue the colossal task of clearing the tomb of Tutankhamen. The glittering treasure recalls the descriptions of the Arabian Nights, and imagination reels at the thought of the wealth and splendour which at one time surrounded the burials of those great Pharaohs who preceded this obscure boy-king.

Mr. Firth's finds at Saqqara show the extraordinary finish of the art and architecture of the IIIrd dynasty.

The tomb of Khufu's mother at Gizeh has proved a disappointment, since the sarcophagus was empty; but the objects found show the richness of the original burial.

The Egypt Exploration Society has sent two expeditions this season—one for excavating, under Mr. Frankfort, first at Tell el Amarna, and later at Abydos; the other, under Mr. Faulkner, is engaged in making a complete publication, by photography and hand copying, of the great temple of Sety I at Abydos.

Mr. Rowe and Mr. Yeivin have been working at Beisan, that very Beth-Shan to the wall of which Saul's dead body was fastened by the Philistines. The Egyptian objects found included two great triumph stelae of basalt—one set up by Sety I, the other by Rameses II. Below the temple built by Sety I there are remains of another temple in which scarabs of Thothmes III were found.

Prof. Petrie's lecture on "Recent Discoveries" will take place on Thursday, May 26th, at 2.30 p.m., repeated on Saturday, May 28th, at 3 p.m., and on Monday, May 30th, at 5.30 p.m., and his exhibition will be open from Monday, June 27th, to July 16th, 10 a.m. to 5 p.m. daily, and on evenings of July 6th and 15th, 6.30 to 8.30 p.m.

The International Congress of Orientalists will hold its meetings at Oxford in August, 1928. Further particulars can be obtained from the Secretary, Indian Institute, Oxford.

ANCIENT EGYPT.

THE HITTITE CORRESPONDENCE WITH TUT-ANKH-AMON'S WIDOW.

THE Hittite cuneiform texts relating to the negotiations between the Egyptian queen S-ankh-Amon and the Hittite king Subbiluliumas, the father of Mursilis II, after the death of Tut-ankh-Amon, have now been published in full by Dr. Forrer, errors in the previous copies being corrected and nearly all the lacunæ being filled up (*Die Boghazköi-texte in Umschrift* II, 2, 1926). Consequently, it is now possible to give a verbally complete and accurate translation of them. They read as follows:—

(2 BoTU 41, p. 69.)

Col. III (1) Now while my father was down at Carchemish (2) he sent away Lupakkis and Hadad-zalmas (3) to the country of Amka (Umk, the plain of Antioch). They departed; (4) the country of Amka they devastated; the spoil, oxen and sheep, they carried back to my father. (5) Later on, the people of Egypt (Mizra) (6) heard of the devastation of Amka; they were terrified. (7) Thereupon, their master (N.B. not "king"), Bib-khuru-riyas, having lately died, (8) the queen of Egypt (S)akhamun¹ (9) despatched an envoy to my father, (10) writing thus to him: "My husband is dead (11) and I have no son; your sons (12) are reported to be grown up; if (13) you give me one of your sons, verily he shall be my husband. (14) Accordingly my servant shall take him away, (15) and I will make him my husband and acknowledge him as Pharaoh." (16) Thereupon my father listened to this (17) and summoned the notables for the business, (18) [but] at this early [stage] (19) he did nothing [of importance] (20) beyond . . . (21) sending the Chief Secretary, his High Chamberlain, to Egypt. (22) "Go" (he said), "bring me back an accurate report (23) as to whether she is in any way deceiving me, and what has become of the son of their (late) Master. (24, 25) So do you bring me back an accurate report of the matter." (26) While the Chief Secretary was coming back from Egypt (27) my father

¹ The scribe has written *da* instead of the similarly formed character *ša* which closely resembles it. The name is S-a(n)kh-Amun.

was attacking the city of Carchemish. (28) On the 7th day he had completed its environment. (29) on the 8th day after offering battle on the 1st day, (30) he [again defeated] the enemy in a successful fight on the 8th (31) and [9th] days. After that (32) he assaulted the city. The gods (33) sent [help to him]; he climbed up [into the city]; the wall (34) of [the city he breached. The general] Inaras (35) afterwards left nothing [unconquered?] (36) Against the neighbouring [territory?] (37) . . . wherever it might be (38) . . . it was destroyed; verily (39) then . . . [to] the city . . . tiras (40) spoil of silver, gold and articles of copper (41) he took up; to Khattusas (Boghas Keui) he carried it, (42) so that the amount of spoil he carried into the Palace (43) was 3330 [talents].

Here follows an uninscribed space extending over eleven lines.

(44) The envoy of Egypt, the Master Khânis, (45) came down to him, and my father on his part heard from his Chief Secretary (46) in Egypt whom he had commissioned (47) as follows: "What is become (48) of the son of their master? and (49) is she deceiving me and does not really want (50) my son to be king?" So to my father (51) the queen of Egypt afterwards wrote (52) as follows: "Why do you say this (53) that she is deceiving me and that I (54) really have a son? I have (IV, 1) humbled myself and my country,¹ (2) I have written to a foreign land; (3) but you have not responded (lit. advanced) to me. (4) The above is what you say to me; (5) nevertheless he who was my husband is dead (6) and I have no son. Accordingly my servant shall take him (7) and I will make him my husband (*sic*). (8) To no other country whatever have I written. (9) Only to you have I written. Your sons (10) are reported to be grown up, so give me (11) one of your sons; he shall be my husband; (12) in the land of Egypt he shall be king." (13) So my father was persuaded; (14) he listened to the lady's words (15) and among (his) sons he selected [one].

Uninscribed space followed by the colophon: (16-18) The 7th tablet unfinished; not yet ready for the bronze tablet (or, as Dr. Forrer renders it: According to the bronze tablet. Not yet finished).²

Dr. Forrer points out that the text as we have it is a first, uncorrected copy. If his interpretation of the colophon is right the bronze tablet, which was kept in "the record house of stone" (or, perhaps, "house of stone records"), will have preceded the copy on clay, and he very ingeniously infers that it would have been engraved on four sides corresponding with the four sides of the tablet, about eleven lines of it having become illegible through oxidation, "so that the end of the first and second columns, as well as the commencement of the third and fourth (where there are blank spaces in the clay tablet) were unable to be read." If the Assyrian preposition is used in its ordinary sense, as my translation assumes, the converse would have been the case, the clay tablet being a first and uncorrected draught of what after correction was incised upon the bronze stela. In any case there are other evidences besides the blank lines, and the statement in the colophon, that it was not the finished copy. In the name of (S)akhamun

¹ Literally "there is a diminution of myself and my country."

² The Assyrian preposition *ana* which is here used would more naturally signify "for" than "according to." But both translations are possible.

the first character has been mistaken for the similarly formed *da*, and in that of Nib-khuru-riyas the initial character *bi* must stand for the Assyrian form of *ni*, sometimes used in the Hittite texts and easily mistaken for *bi*.¹ In IV, 6, moreover, as compared with III, 14, the adverb has fallen out, so that the natural rendering would be either "I have taken my servant," or "take my servant."

¹ The mistake was doubtless assisted by the same tendency to alliteration as that which changed Nib-mu-riya into the Tel el-Amarna Mimmuriya.

A. H. SAYCE.

Though the figures of the princesses at Tell el Amarna are nearly all mutilated, one figure remains of Onkhes en amen, afterwards named Onkhes en aten, whose name is written by the Hittites as Sankhamun. We owe this figure to Mr. N. de G. Davies' copy from the tomb of Panehesy.

F. P.



THE GĀLA.

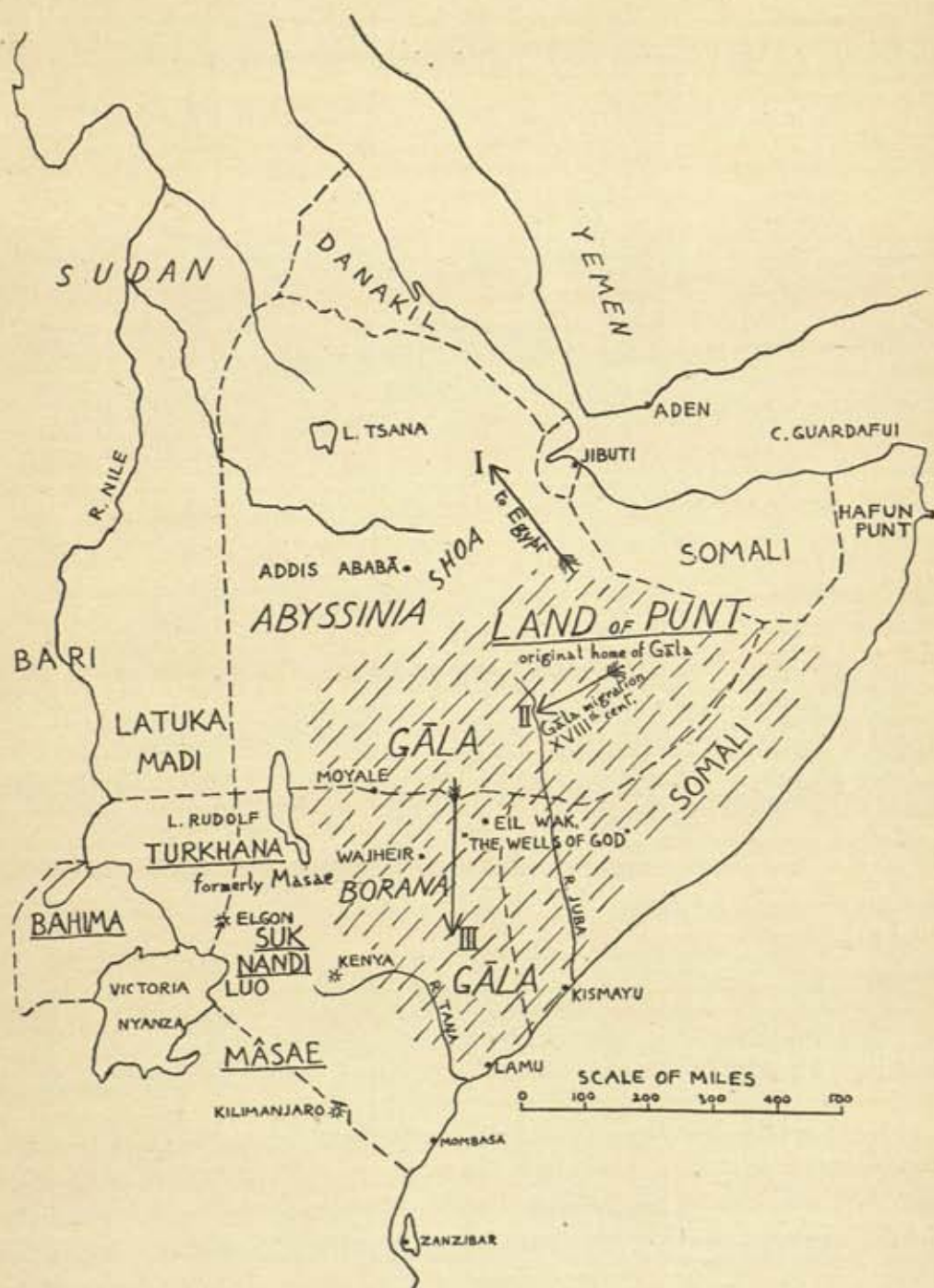
	SECT.	PAGE.		SECT.	PAGE.
I.—History and Ethnology ...	1-4	36	III.—Agriculture and Crafts ...	14-16	40
II.—Mode of Life ...	5-13	38	IV.—Government ...	17	41
<i>a.</i> Houses ...	6	38	V.—Religion and Superstitions ...	18-24	41
<i>b.</i> Food ...	7	39	VI.—Circumcision ...	25, 26	42
<i>c.</i> Clothes ...	9	39	VII.—Marriage and Adoption ...	28-32	43
<i>d.</i> Ornaments ...	10	39	VIII.—Warriors ...	33-34	44
<i>e.</i> Hair ...	11	39			
<i>f.</i> Soap ...	12	39			
<i>g.</i> Smoking ...	13	39			

Gāla words in this paper are given according to Tutschek's spelling. The only letters needing explanation are: *d'* = *d* followed by *hamza*; *tʻ* = almost a lisp; *ñ* = Spanish *ñ* without the *y*-sound following; *ç* = *s*; *z'* = English *sh* or *zh*; *ʔ* = Arabic *hamza*.

I.—HISTORY AND ETHNOLOGY.

1. THE Gāla are the remnant of an ancient Hamitic people who appear to have come from North-east Africa, now Somaliland, the region which is most probably to be identified with the land of Punt. It seems, also, that from the same stock which produced the Gāla came the dynastic Egyptians, as I have suggested (ANCIENT EGYPT, 1926, p. 10). This is attested, among other things, by the proofs of the Gāla origin of the XIIth dynasty (ANCIENT EGYPT, 1924, pp. 38-42). The Gāla word for "God" or "sky," *Wak*, seems to be turned into Egyptian as *Uahka*, the IXth dynasty name. It is perhaps worth noting, in regard to the prophecy quoted in ANCIENT EGYPT, 1924, p. 41, that "a king shall come from the south, whose name is Ameny," that Aman is a modern Gāla personal name. A further connection suggested in ANCIENT EGYPT, 1926, p. 96, of "the great (Gāla) goddess "Atête" with the Old Kingdom name Ateta, would refer to a festival rather than a goddess, as named in *O.L.Z.*; *Atêlé* (var. *atêl*) is defined by Tutschek (Galla Dictionary, p. 4) as a "certain festival."

2. The original home of the Gāla was somewhat to the east of the modern Abyssinia. In this region the Gāla were settled at the time when they invaded Egypt. About A.D. 1735, they were driven to the west, and overran the southern part of Abyssinia, which is their present home. The name Gāla is derived by Tutschek from the Gāla verb *gāla*, "to go home," and is connected by him with this settlement in Abyssinia. (Dictionary, p. 20.) Another migration took place at a later date to the south, when the eastern part of the present Northern Frontier Province of Kenya Colony was occupied, as far as the Tana river. This migration was probably prevented from going in a south-westerly direction by the presence of the Māsae, which is shown by Māsae place-names round and south of Lake Rudolf; this movement may be provisionally dated to c. 1750. There are now two Gāla tribes in Kenya Colony, Beraretā and Kofira, who were cut off from the rest of the Gāla by the Somali, and live in the Tana district. The account of them, published in the Annual Report for 1925 of the Native Affairs Department of Kenya (Nairobi, 1926, pp. 11, 12), is not flattering. They are said to be "a thoroughly decadent and declining race . . . incredibly cruel to both



women and their Boni retainers . . . Their sole interest in life is cattle, women, ivory, money, drink and tobacco" (p. 12). "They are mean, despicable, treacherous, avaricious, cowardly, full of intrigue and quite untrustworthy," though they are "clever and intelligent stockmen" (p. 11).

3. Krapf's "Galla Language" (London, 1840) mentions more than sixty Gāla tribes; the following seem to be the more prominent:—

(1) Gāla proper (or Oromo), with sub-tribes of:—

- i. Horad'a.
 - ii. Midjile.
 - iii. Robale.
 - iv. Kilole.
 - v. Berareta
 - vi. Kofira
- } in Kenya Colony.

(2) Warra Elma, "the milkers."

(3) Ilma Orma (or Oromo), "sons of foreigners" (or "of Gāla").

(4) Wateza (the name of a sacred tree).

(5) Borāna, in Kenya Colony, with sub-tribes of:


- i. Wadjo.
- ii. Djarzo.

4. It is sometimes said that the Gāla and Somali are ethnologically the same. This is not so; the Gāla are Hamites, and the Somali Semites or Asiatics, and not racially akin to the Gāla.

II.—MODE OF LIFE.

5. The following brief account of the manners and customs of the Gāla is based largely on the miscellaneous information scattered through Karl Tutschek's "Galla-English Dictionary" (Munich, 1844), which I have collected under separate headings for convenience of reference. Quotations from Tutschek are indicated only by inverted commas. The reference is to the Gāla of Abyssinia of 80 to 100 years ago, rather than to those in Kenya. Comparative references are given to tribes of partly Gāla origin, *e.g.* Nandi (Ndi.), and Māsae (M.), and to Egypt.

a. Houses.

6. The Gāla live in villages (*mandara*; Amhāric, *mandar*). There is a place in the Northern Frontier Province, Kenya, called Mandera). Each village consists of a single "farm," surrounded by land for pasture and cultivation. Similarly, the Ndi. and M. do not live in villages, as the term is usually understood, but in homesteads, each complete in itself, *e.g.* Ndi. have the main hut, warriors' hut, granary, cattle-fold, and cultivation. The huts are called *mana* (pl. *maneti*; cf. Ndi., *meny*, dwell; Egyptian ). They are divided into rooms (*gararad'a*) by partition walls (*goro* or *tchitchara*); the sleeping-place is *d'inca*. The house-doors are fastened by wooden bars (*zeqe*, or *dangara*). The hearth (*gemo*) consists of three stones upon which the cooking-pot is placed. Ndi. huts are divided into two rooms by a partition wall (*tolet*)—the people, goats and sheep sleeping in one room, the calves and cows in the other. The same type of fireplace occurs in Ndi. huts, and in prehistoric hut-circles in Nandi. By way of utensils, the Gāla have

jars for storing grain (*tchuko*), stools (*tupilo* and *bardyuma*), baskets (*gundo*), plates (*djibdi*), cups (*budugza* and *buda*), a case containing a knife, awl and needle (*garaba*). For lighting, they use candles of tallow (*gipo mora*), and of wax (*gipo gaga*). For fuel, dried cow-dung (*kobodo*) is used, by means of which flies and insects are driven away.

b. Food.

7. They eat, among other things, potatoes (*dinitcha*), flax seed (*dalba*, *Linum africanum*), roasted barley (*baço*), maize stalks (*bokolo*), porridge (*moca*), cheese, and a raw food made from a species of durra. After eating it is customary to tread upon the eater's back, as an aid to digestion, *Kod'u dugde na catchai*, "come tread on my back."

8. Of beer (*dyalali*), they have several kinds. One kind is made from wheat (*ombori*) and honey (*dagma*).

c. Clothes.

9. For clothes (*waya*), the men wear breeches (*marto*), undershirts (*waya*), and cloaks to keep themselves warm (*bagalla* and *zogola*), and to keep off the rain (*batiya*).

The women's garments (*fitala*) consist of gowns with red and blue stripes (*rufa*), sleeved shirts or blouses (*handabo*), sleeved gowns (*balaze*), a blue-black garment called *gurati*, speckled shawls (*djifara*), and a large shawl (*walu*), which is worn over the *handabo*, and tied round the waist with a scarf (*hirma*), and which forms a fold in which they carry their babies. The Ndi. and M. women carry their babies in a similar way.

d. Ornaments.

10. Ornaments consist of pearl armlets (*robda*), bracelets (*malta*), silver armlets covering the fore-arm to the elbow (as with the M. and Ndi. who also cover the upper arm) (*zomboco*), pearl necklaces (*burana*, which is perhaps the origin of the tribal name *Borāna*), tin bracelets on the upper arm (*giridja*), ivory rings on the fore-arm (*djano*), strings of pearls round the legs (*doca*). Old women wear a ring called *naca* "on the feet." Men wear fur caps (*gomfo*).

e. Hair.

11. The common people may not wear beards, or only very short ones; the beard is worn long by chiefs and priests (as Egypt). Unmarried girls wear a tuft of hair on the crown of the head, called *care*, which is ornamented with pearls, and which is cut off on the day of marriage; hence "*durba care*" means an unmarried girl.

f. Soap.

12. Soap (*handode*; Amhāric *endōd*) is made from a plant of the same name.

g. Smoking.

13. The Gāla are very fond of smoking tobacco (*timbo*), which is smoked in pipes (*gaya*). It seems that tobacco is sometimes mixed with *bhang*, "for Akafad'e relates of very strong smokers having sometimes died in a few days with violent coughing."

III.—AGRICULTURE AND CRAFTS.

14. The chief occupations of the Gāla are stock-farming and agriculture. The necessities of life are produced by craftsmen (*tumtu*) who are held to be effeminate by the warlike Gāla, and accordingly looked down upon. Such are weavers, tanners, potters, leather-workers, smiths, and tailors. Similarly, the Ndi. and M. are chiefly stock-men, and hold other forms of labour in contempt; indeed, among them, smiths are an outcast class.

15. For the cultivation of the soil, the Gāla use, besides spades (*horta*), a plough (*gintli*), drawn by oxen (*godiyo*); they have also a plough, drawn by four oxen, called *tchimdi*. The parts of a plough are called:

Share	<i>garfo</i> or <i>maraza</i> .
Slade or bottom	<i>babate</i> .
Ring which fastens the share	<i>margadja</i> .
Stilts	<i>horta</i> .

The yokes (*gambari*) are fastened to the beast's neck by keys or sticks thrust through the yoke (*gindjirti*), much in the same way as in ancient and modern Europe (see *Reliquary*, N.S. XI, 221), and in Africa to-day. "*Cotun maraza roga caba*," the ploughman holds the plough-share obliquely (in order to get it into the ground).

Grass is made into hay, and turned with a two-pronged pitchfork (*gorbi*).

The Gāla know several kinds of grain crops, *e.g.* :—

Durra beda	<i>T7afi</i> .
White durra	<i>T7afi adi</i> .
Black durra	<i>T7afi guradja</i> .
Another sp. of white durra	<i>Mizinga adi</i> .
Another sp. of black durra	<i>Mizinga guradja</i> .
Red durra	<i>Mizinga dima</i> .
Triticum sp.	<i>Ombori</i> .
Hordeum sp.	<i>Guge</i> .
Zea spelt	<i>Bokolo</i> .

Grain is winnowed with a shovel (*darba*), and stored in clay huts (*gumbi*); it is ground by mill-stones (*daka-daka* or *wacāra*) which are dressed by a stone called *wacarā*. Meal is *daku*.

16. Cattle breeding "is carried on so extensively . . . that, from a scarcity of fodder for their numerous beasts, very distant pastures must often be sought for, which causes continual disputes with the neighbouring tribes." Cattle should not be counted, as the proverb says—*Lon-ke hillakaini*, "do not count your cattle."

Names for various kinds of cattle are :—

Cattle in general	<i>Lon</i> .
Calf (m. or f.)	{ <i>Tshabi</i> .
	{ <i>Djibitcha</i> .
Young ox	<i>Wofana</i> .
Working ox	<i>Godiyo</i> .
Three-year-old ox or heifer	<i>Gorba</i> .

Heifer old enough to breed..	∴	<i>Goromza.</i>
Bull	∴	<i>Korma.</i>
Bull with erect hump	∴	<i>Korma bordeda.</i>
Bull with hanging hump	∴	<i>Korma gurra.</i>
Bull	∴	<i>Ulfīn.</i>
Store ox	∴	<i>Zanga.</i>
Two-year-old cow	∴	<i>Rad'a.</i>
Cow	∴	<i>Zawa.</i>
Pregnant cow	∴	<i>Zilga.</i>

They have also camels (*gimala* ; Amhāric, *gimal*), donkeys (*harre*) and sheep (*hola*) and goats (*ree^s*).

IV.—GOVERNMENT.

17. "The form of government is in the free tribes, *i.e.* those that are not subject or tributary to any neighbouring power (Abyssinian, etc.) monarchical-despotic, and the dignity of the king (*moti*, chief) devolves by inheritance to the male descendants (in some few also to the female), or the *moti* is changed by election after a certain number of years. . . . Under the *moti* stand the *Zoreza* ('princes') from among whom the heads of places (*aba ganda*) are chosen, while the other mighty men of the tribe are only *aba lafa* (fathers, or lords of the soil), a condition which answers to that of our noble lords of manors or landed proprietors." Under the *aba ganda* are lesser officers called *aba fuño* (lords of the string). The court of elders is called *mangudo* ; the chief's house, *mazara*.

The Ndi. system corresponds more or less with that of the Gāla. The chief was originally the *kiruogindet*, under whom were *kiptaiēnik*, and still lower, *claitortnik*.

V.—RELIGION AND SUPERSTITIONS.

18. "Their religion is a monotheism obscured by many superstitions. The Gallas adore a supreme being, *Wak^a* (originally 'heaven'), who is almighty, omniscient, all-good, all-wise, in short, possessing all the qualities which we Christians attribute to our God. The worship consists in prayers and sacrifices (the adoration of a tree is most decidedly impugned by my brother), and penetrates deeply into all the circumstances of life. If this natural religion has not been brought into some system, which is very probable, it is evident from the communications that the moral views connected with it exercise a very beneficial effect on the manner of thinking and acting of the confessors. . . ."

19. In addition to *Wak^a*, they believe in two kinds of sunshine, *adu*, which destroys, and *biftu*, which gives life. Similar beliefs occur among the Ndi., M., and other African tribes. In Egypt, we may compare the antagonism of Horus and Set. Sacrifices (*hači*) are offered to *Wak^a*, in some of which a cup (*wile*) is used ; sacrificial animals are called *dēca*. When the people go to a sacrifice, or when warriors return from war or the chase, branches of the sacred tree *meeča* called *kalala*, are carried before them.

20. The *meeča* tree is also used in the ceremony of swearing an oath : Gadyo swore under the Michaila tree with the *kalatcha*, saying, "The fortune which I have, may God lick it out of my house and disperse it, if I do, or do not do,"

so and `so (" *Hori ani cabu Wakayo gēekoti-ha muḥad'u ha bal-ezu!*" *djed'eti*"). The *kalatcha* is a staff covered with leaves of the meeça tree. An oath once sworn is inviolable.

21. *Feasts*.—At the Gāla new-year, in mid-September, a feast called *Maczala* is held, at the time when the kelo flower blooms. It occurs at the same time as the Abyssinian feast of Michael, from which it seems to be borrowed.

There is also a festival called *Atêté* or *atêti*.

22. *Sacred trees*.—The following trees are held sacred: *macaniza*, *ba*, *laflo*, *wateza* and *meeça*.

23. Of prayers to *Wak*, we have the following examples:—

"All the grain on earth thou hast made" (*Mid'an lafa kanarale zitu god'e*).

"Pray to God with an empty mouth" (*Wakayon afan agabudan kad'-ad'u*).

"What God has promised, that he performs" (*Kan Wakayo djed'e ini infulafud'a*).

"God alone has no obligation" (*Wakayo tokitshi gidin cabu*).

"If God leads thee, thou art well led" (*Ho Wakayo zigeza ingefamta*). (Cf. Ndi., "It is God who has gone ahead to lead me" (*Cheptalil ne indoi, si ko'muta*)).

The locust is called the horse of God (*Farta Wakayo*). The rainbow, God's sash or scarf (*zabata Wakayo*).

24. *Fabulous creatures*. The Gāla have the following mythical beasts:—

(1) *Hilu*, a kind of monkey that eats flesh.

(2) A creature called *Bauda*, half human and half animal, of the female sex, that eats flesh.

(3) *Adi*, a creature which "has the faculty of changing itself into every form and terrifies, particularly as a ghost or phantom. Its colour is white (*adi*), a colour which by the Gallas . . . is regarded as fatal and infelicitous."¹ With these may be compared the various monsters common to African folk-lore; I will name three instances: Ndi. *Chemosit* (Hollis, "Nandi," p. 41); *En-e'-n-aunir*, M. (Hollis, "Masai," p. 265); and the *Isukha* (Bantu, "dog of the night," *Lināni*) which went about with fire issuing from its mouth, and ate people.

VI.—CIRCUMCISION.

25. Circumcision is practised; and the divisions of the Gāla are arranged in the order in which they come in regard to this rite. Hence it is a ceremony of some importance. The circumcision order of the four chief tribes of the Gāla proper or Oromo is: Horad'a, Midjile, Robale, and Kilole.

26. The circumcision festival (*djara*) at which the actual operation is performed, is held two years after the preliminary ceremony called *Gada*, the nature of which is not clear, though it seems to imply something done secretly at night. At the *Djara* ceremony, priests called *tchala* officiate. The food eaten during circumcision is called *cora*.

27. In the case of women, a mild form of clitoridectomy is practised, as among the Ndi. and M.

¹ Color deterrimus albis. Verg. G., III., 82.

VII.—MARRIAGE AND ADOPTION.

28. Polygamy is practised, and a man may have as many wives as he can support. The chief, besides his wives (*gena*), may take as concubines (*zadjeda*) girls out of any family, who regard it as an honour to be thus chosen. The Ndi., M., and other tribes of their sub-group, practise polygamy. Among the Ndi. the unmarried warriors, and even married men, often have girls who are called *mureret*.

29. When a man wishes to marry, "which every youth does as soon as he is arrived at the age of puberty, he goes to the father of the girl he has chosen, and demands her, at the same time informing him how much property he has (in oxen, horses, sheep, etc.). If the girl has many wooers, that one takes her home to whom the girl gives a gold ring. (During the 'ceremony' of marriage among the Ndi., a skin ring is put on one of the man's fingers, and a skin bracelet on the girl's wrist.) On a certain day, in the presence of the relations and friends of both parties, the marriage is concluded according to law, with prayers and religious ceremonies," a cow called *rako* being slaughtered. (Among the Ndi. two rams are killed; among the M., a goat.)

"The woman receives her portion after her first son is born; if she bears a daughter, she receives nothing or little, and this circumstance generally causes separation. As the female sex holds a very inferior rank, this has no difficulty, and if the husband pleases, he can drive her out of his house, for other causes than the above-mentioned. In such cases, or even if the woman herself desires the separation, or runs away, the proposition, 'partus sequitur ventrem,' is not valid; but the husband keeps the children, for it would be considered a crime for him to desert them."

A girl of marriageable age is called *gunduta*.

30. Widows (*gurzumedi*) may be inherited; women who are abandoned by their husbands are also called *gurzumedi*.

31. *Adoption*.—Children are sometimes adopted, when a ceremony is performed "in which the relations go in solemn procession ('*waliti ananili*,' hanging on each other), to the house of the adopter, everybody carrying a twig of the sacred tree *meeça*, still covered with leaves, and in this manner delivering up to him the child which is to be adopted." When a person has children of his own, an adopted child is called *gubifad'a*.

32. The following are some of the terms denoting relationship:—

Father	..	..	..	..	..	<i>Aba.</i>
Mother	..	..	..	..	..	<i>Had'a.</i>
Son	..	..	..	..	..	<i>Ilma.</i>
Daughter	..	..	..	..	..	<i>Indalla.</i>
Second son	..	..	..	..	..	<i>Gudizu.</i>
Brother	..	..	..	..	..	<i>Had'o, Oboleza.</i>
Sister	..	..	..	..	..	<i>Oboleti.</i>
Step-brother	..	..	..	..	..	<i>Golo.</i>
Paternal uncle	..	..	..	..	..	<i>Wozila.</i>
Brother-in-law	..	..	..	..	..	<i>Zoda.</i>
Sister-in-law	..	..	..	..	..	<i>Warza, Zayu.</i>
Any relation	..	..	..	..	..	<i>Lami.</i>

VIII.—WARRIORS.

33. All Gāla, other than the elders, are warriors (*watadara*; Amhāric, *wathāddar*). They are, in fact, a tribe of military herdsmen, like the Ndi. and M.

On the frontier of each tribe is a stockade (*bero*), protected by a trench (*hirio*), to keep out invading cattle-thieves.

34. The various kinds of spears used by warriors are: *Tchoko*, a spear with a jagged edge to the blade; *Hofa*, a long spear with a pointed blade; *Tchirfa*, a long spear with a smooth-edged blade.

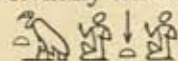
By way of military decorations, they have: *Gudidja*, a large bracelet; *D'ugo*, a round earring, for bravery in war or the chase; *Ilbora* (Amhāric *irbora*), an ivory armlet worn on the upper arm by men who have killed an enemy. The Ndi. and M. have decorations for bravery.


The warriors hold periodical feasts called *Gerara* at which war-songs are sung, and at which a cow is killed, and a piece of its flesh, called *kuba*, is carried "with the skin to an unfrequented place and left there for the beasts; a symbolic action by which this *kuba* means the 'killed for'; to eat the *kuba* is prohibited (*kirmi*."

G. B. HUNTINGFORD.

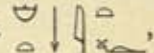
NOTES ON SOME GENEALOGIES OF THE MIDDLE KINGDOM.

IN studying the genealogies of the Middle Kingdom, the question of consanguineous marriages at once arises. Such marriages occur, though infrequently, and occasionally the names suggest that the custom had been more general. Such names are

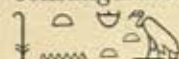
, "My mother is my sister" (*Abydos* III, pl. XIII), which indicates

a father-daughter marriage, or , "My father is my brother" (S.G.D. 20085), which points to a mother-son union. It is often argued that the terms of

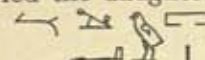
relationship were not so strictly applied as at the present day, and that when a woman is said to be the "sister" of a man, the word may mean wife's sister, brother's wife, paternal or maternal aunt, niece, or even cousin; but this can

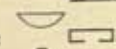
hardly be the case when we find such particularity of definition as ,

"Wife of the brother of his father" (S.G.D. 20051). The fact of such closely consanguineous marriages is clearly seen in the titles of royal ladies, who were

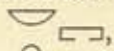
, "Wife and mother of the King" (see No. 16).

These marriages seem to occur in all classes of society, and it can hardly be a coincidence that they are usually found in families where the names Wah-ka, Bebu or Beby, and names compounded with Khnum and Sebek, were used. The genealogies given here are those of small officials, not necessarily connected in any way with the royal house or even with the families of the great nobles. The references are to B.M.ST. *British Museum Stelae*: M.C.A. MARIETTE, *Catalogue of Abydos*: M.F.D. DE MORGAN, *Fouilles de Dahshur*: REC. *Recueil des Travaux*: S.G.D. SCHAEFER and LANGE, *Grab Denkmäler*. * Indicates names of women.

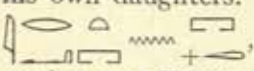
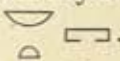
1. In the genealogy of Wah-ka (S.G.D. 20043) there is a straightforward descent of three generations; Wah-ka himself, his mother, and his maternal grandmother. But the filiation of his two sisters shows the marriage of a father and two daughters, Bebu being the daughter of Wah-ka (*i.e.* the grandmother, as the epithet after the name is feminine), and Ka-hent being the daughter of Bebu. In other words, the grandfather married Wah-ka Iuf-senb, by whom he had two daughters, Rens-ankh and Bebu; he married both daughters, Rens-ankh's child being the Wah-ka commemorated on the stela, and Bebu's child being Ka-hent, sister of Wah-ka. Mariette's suggestions (*Catalogue d'Abydos*, No. 892) that Bebu was the father of Wah-ka is untenable, as the name is over the figure of a woman. The only other possibility is that the grandmother, Wah-ka Iuf-senb, married twice, and that the second husband married the daughters of his predecessor. Wah-ka was not of high rank, being only ,


and none of the women of the family, except his wife, were .

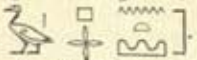
2. The same family is recorded on the stela of Hor-zeruy (S.G.D. 20681) with the slight alteration of abbreviating the name of Wah-ka Iuf-senb to Senb. Here again the relationships show father-daughter, and also aunt-nephew, marriages. Ta-entet-ny, sister of Hor-zeruy, had a son Sebek-hetep, who is called the brother of Hor-zeruy; and Ta-entet-ny also married Wah-ka, son of

Rens-ankh, her half-sister. Ta-entet-ny has no title in this genealogy, though her mother was a , as was also Mut-hetep, wife of Hor-zeruy.

3. The name of Nefer-rud occurs again in another stela (S.G.D. 20158), which appears to be also of the family of Hor-zeruy. He may be the great-grandfather of Wah-ka, son of Rens-ankh, though it is possible that he is of the same generation as Wah-ka, for one of his step-mothers is Rens-ankh, and his half-sister and his son are both called Wah-ka. There is a possibility that Nefer-rud's mother and wife, who were both named Hetept, were one and the same. Hetept is, however, a common name, and may be that of two separate persons; but in view of the fact that intermarriages occur elsewhere in the family, it is not unlikely that this is the record of a mother-son union. The Nefer-ruds of S.G.D. 20636 are probably of the same family collaterally.

4. The genealogy of Sen-mry Kheper-ka-Ra (S.G.D. 20141) can be explained only as the marriage of a man with three women, two of whom are presumably his own daughters. Sen-mry held only a small office at the royal court, being , and none of the women were even . Sen-mry's mother was Hatshepsut, who was born of Yay; he had a brother, Ka-em-saf, born of Hatshepsut; another brother Sebek-em-she, born of Yay; a sister Bebu, who is discreetly said to be "born of her mother," and who, therefore, might be a step-sister; and a brother Sen-mry, born of Bebu. Again, the only method of accounting for the relationships is by a man who married Yay, then her daughter Hatshepsut, who might have been his step-daughter, and, finally, his own daughter Bebu, whose son Sen-mry was a brother of Sen-mry Kheper-ka-Ra. The fact that Sen-mry Kheper-ka-Ra had a double name suggests that he was younger or, at least, less important than Bebu's son, and was given a second name to distinguish him from his half-brother.

5. A mother-son marriage is found in the stela of the , Sebek-dedu (S.G.D. 20696), son of Inkaf and Ytau. Here his wife is emphatically stated to be Ytau. This may have been a ceremonial marriage, as no children are mentioned.

6. The scribe of the stone-masons, Pa-unt (S.G.D. 20749), was the son of Yusny and had a daughter of the same name. He had also a daughter Nefer-hetep, born of Yusny; but there is nothing to show whether this was a father-daughter, or a mother-son, marriage. His wife was Senebtisi, daughter of Ka-nes, and one of his daughters is also said to have been born of Ka-nes. He would thus have had three marriages; Senebtisi, her mother, and his own mother or daughter. [In REC. IX, 35, on a stela of the same family, a son's name appears as .

7. On the stela of the goldsmith Sebekhetep (S.G.D. 20271) his own genealogy is clear. His mother was Nefer-Khai, daughter of Dedet-Mut; his own brother was Hepy-Ka; his wife was Dedy, by whom he had five children, one daughter being called Beby. But following directly on the name of his own brother comes "his sister, Hetepui, born of Dedet-Mut." This again can be explained only by a father-daughter marriage.

8. The marriage of Se-hetep-ib (REC. III, 122, xv) shows the union of a brother and sister. Aatet (sister of Hor-her-nekht, the owner of the stela) was the mother of Wabt, born of (*irt-n*) Amen-y; Hor-her-nekht's brother was Amen-y;

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FAMILY C
WAN-KA

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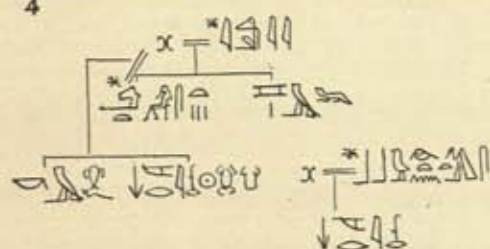
FAMILY OF
HOR-ZERU

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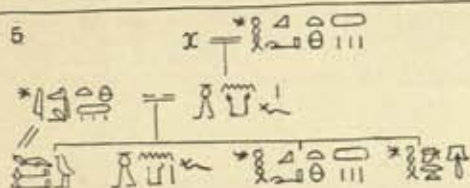
FAMILY OF
NEFER-RUD

4



FAMILY OF
SEN-MERY KHEPER-KA-RA

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FAMILY OF
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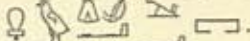
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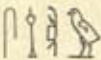



FAMILY OF PA-UNT

Ameny's mother was Se-hetep-ib, born of Sat-Hathor, and his father was Se-hetep-ib, also born of Sat-Hathor. Sebek-iam, who was the father of Hor-her-nekht and, presumably, of Aatet as well, appears to have married his own mother and his wife's mother. The only titles among the people commemorated on this stela are of small officials, none of whom were related to the principals.


9. The relationships of Sebekhetep and his father Khnems (S.G.D. 20156) also show closely consanguineous marriages. The wife of Khnems was Mer-seger, daughter of Hapyu, and she bore him four children, Sebekhetep, Ibi, Senb, and Kemten. But besides these brothers and sister, Sebekhetep had three sisters: Neferu and Beby, born of Hapyu; and Semut-ib, born of Beby. It is evident that Semut-ib is really a sister and not a niece, for the real nephew is mentioned without any definition of relationship as "Senebtifi, born of Kemten." Again, the title of Sebekhetep, who alone is mentioned as holding any office, is not a high

one, .

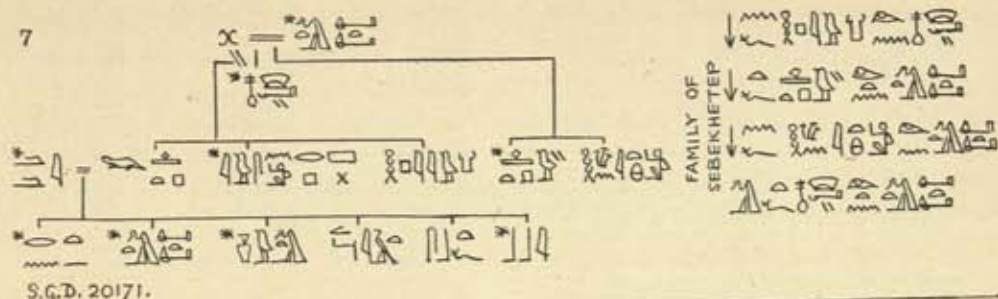
10. On the stela of Rensenb (S.G.D. 20160) a father-daughter marriage is shown. Khnemt had, by an unnamed husband, three sons, Keku, Yay, and Sebekhetep; she had also two daughters, Sat-Sebek and Rens-senb. Sat-Sebek had two sons; one was Pesesh, the brother of Keku, son of Khnemt; the other was Senb, the brother of Sebekhetep, son of Khnemt. This relationship could have occurred only by the marriage of Sat-Sebek with her mother's husband, probably her own father. Sebekhetep's office was , and his brothers were  and ; again showing a family of small officials. Sat-Sebek, however, was a , and so also was her daughter Tety-urt, whose name is given without other relationship.

11. The genealogy of Ptah-sankh-en (S.G.D. 20153) shows an aunt-nephew marriage, of the kind with which we are familiar in the parents of Moses. Ptah-sankh-en's mother was Sat-sen, his father was Sebek-nezem, son of Sat-khent-khety, and his wife was Nefert-yu, daughter of Sat-khent-khety, and therefore a sister of her husband's father. There is also a strong presumption of a mother-son marriage, as Ptah-sankh-en's brother was also the son of Sat-khent-khety. None of this family is recorded as holding any offices.

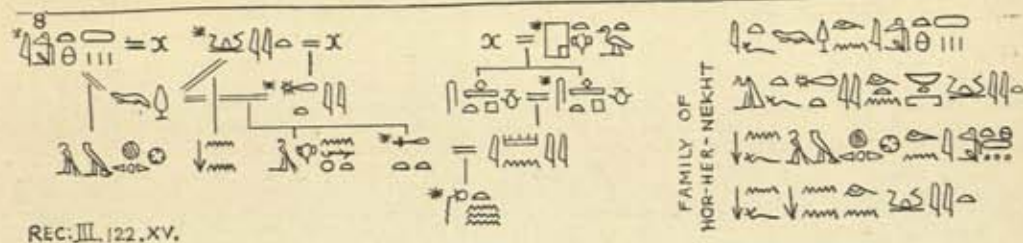
To turn to another line of investigation, it is important to note how different stelae link up with one another. In this way it is possible not only to supplement the genealogy of one family (as in Nos. 1, 2, and 3 above), but also to connect two or more families together. Though there is still much work to be done, a few notes will indicate the line of research.

12. There is a certain Rehu-ankh, born of Pepu, whose name occurs on several stelae (S.G.D. 20104, 20147, 20157, Piehl III, 10k, REC. IX, 63, 8). His only title is , yet he seems to be of sufficient importance to be mentioned by all the members of his family. Taking the stela published in REC. IX, 63, 8, as the fullest, it is possible to fill up many of the blanks from the other sources. The genealogy No. 12 gives the connections caused by the marriages of Rehu-ankh and his sister Ta-net-sesh, and there is no doubt that further ramifications may be found. Thus, Senby, born of Tau (REC. IX, 63, 8), proves to be the Senby, born of Tau, of S.G.D. 20614, where his father's name, Neb-pu, is given. Snennu, son of

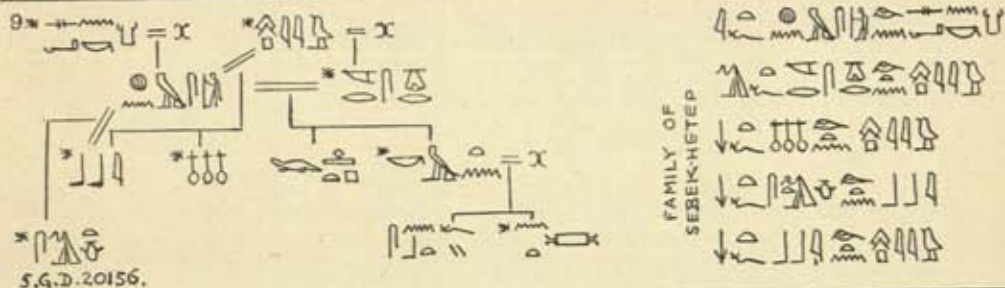
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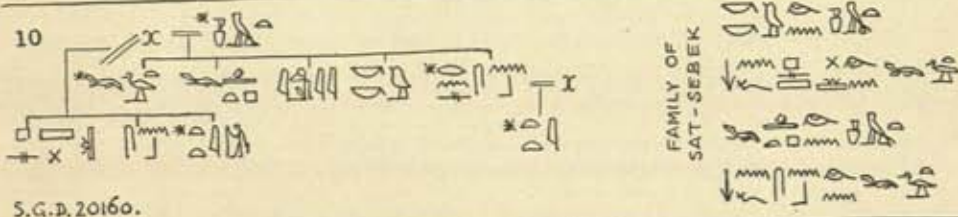
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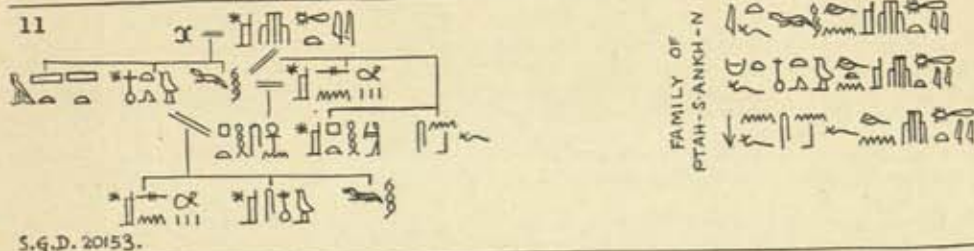
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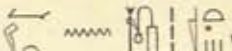
Kemny and Tety, is another personage whose name appears on several stelae, generally on those of the Rehu-ankh family.

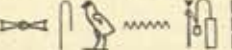
13. The name of the well-known noble 




I-kher-nefert, son of Sat-Khonsu, occurs, as might be expected, on more than one stela. The fullest is that published in B.M.ST. III, 11, where the names of both parents and both grandmothers are given. In the inscriptions of S.G.D. 20038, 20310, and 20683, there are other names; and from the fact that

Nesi-Ptah, son of Sebek-em-sas, is the principal officiant in the scene of offering, I would suggest that he is I-kher-nefrut's son; this would make Sebek-em-sas the wife of I-kher-nefrut, and would give a genealogy of five generations. It would then be interesting also to note the continuation of Ptah-worship. I-kher-nefrut's father was called Snefru, the abbreviated form of Ptah-snefer-ui; and four out of the five children of I-kher-nefrut (supposing that I am correct in regarding Sebek-em-sas as his wife) have names compounded with Ptah.

14. The two stelae, S.G.D. 20039 and 20309, supplement one another. The

, Se-hetep-ib appears to have died when his son, the

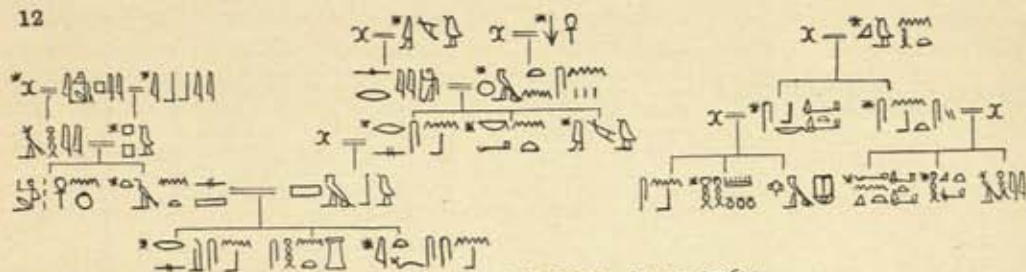
, Iuf-ni-er-sen, had only one child; but on Iuf-ni-er-sen's own stela seven children are mentioned. The titles show that both father and son held office among the scribes of the Qedet.

15. The three stelae, S.G.D. 20055 and 20679, and M.C.A. 669, are of one family. As no titles are given, it is impossible to identify the family in other inscriptions, except by relationships, a matter of some difficulty, as names are frequently abbreviated. In M.C.A. 669 there is a daughter of Dedet-Neshemt, Neferhetep, who is not mentioned elsewhere; the name, however, may be a mis-copy of the Anhur-hetep who occurs on both the other stelae. The spelling of Ib's mother's name is variable,  or , and she may possibly be the same as , the daughter of Wat. If so, these variants would give some knowledge of the phonetic value of the signs.

16. I have to thank Mr. Guy Brunton for permission to publish his drawing of a cylinder seal of Queen Urt in the Iversen Collection. Mr. Brunton suggests that as she is called only the King's Wife when living, and the King's Wife and Mother when dead, the double title cannot necessarily refer to an actual relationship. On the other hand, it is impossible to found a theory on the one example only; and as mother-son marriages are known in the XVIIIth Dynasty, and father-daughter marriages under Snefru, the custom of parent-child marriages would surely occur in the Middle Kingdom.



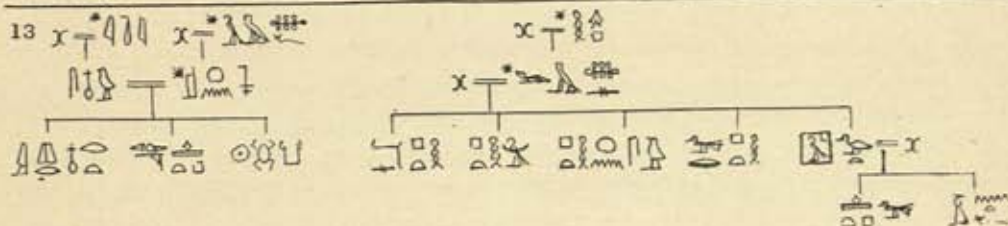
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REC. 63.8.

S.G.D. 20104, 20147, 20614.

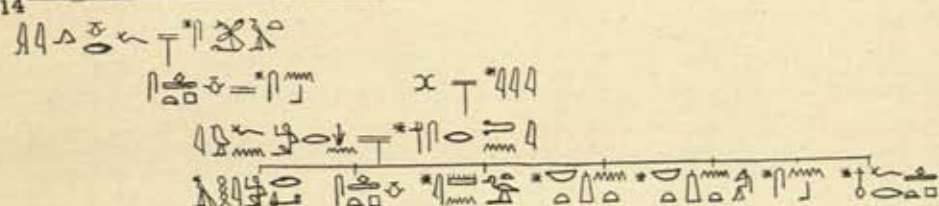
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B.M. ST. III. 11.

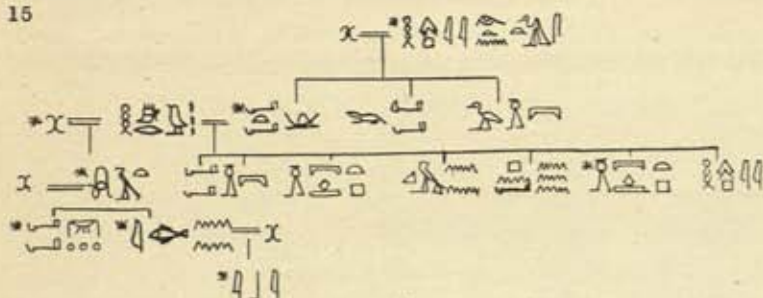
S.G.D. 20310, 20683.

14



S.G.D. 20039, 20309.

15



S.G.D. 20055, 20679.

M.C.A. 669.

16

SENUSERT II



KAHUN PAP. A.Z XXXVII. 96.

XIII & DYN.



SCARAB

B.M. CATALOGUE OF SCARABS.

CYLINDER SEAL



IVERSEN COLLECTION

M. A. MURRAY.

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REVIEWS.

Studies in Early Pottery of the Near East. II. Asia, Europe, and the Aegean, and their Earliest Interrelations. By DR. H. FRANKFORT. Large 8vo. 198 pp., 13 pls. 1927. (Royal Anthropological Institute.)

This is a work so far unrivalled, and co-ordinating most important material. It deals with an immense amount of detail, from the Neolithic age to the XVIIIth dynasty, and stretching from Spain to China. Even the more detailed study covers the whole region from the Caspian to Greece. To handle so many thousand facts in less than 200 pages causes a breathless chase after conclusions. The mere glimpses of the past flitting by, which are each very incomplete and scarcely connected, make tantalizing problems, which we may hope some day to solve, when the various countries are available for systematic work. This difficulty of co-ordination is faced by Dr. Frankfort, for in principle he has a wholesome distrust of equations of time or of origin, and allows much to re-invention; yet in practice the lure of discovery induces him to pour out suggestions, which cannot really be estimated without a large library for comparisons.

The great necessity, before these very complex questions can be dealt with, is the complete working of a few deep sites in different countries, with strict order of levelling, and full illustration of every object found. This has been carried out in the past season at Gerar, over a range of eleven hundred years. Further, in the treatment of the ascertained material we need diagrams of argument, with outline figures of the material for comparison. At present we are treated to a verbal linking-up of hundreds of equations which are involved together, and it is very difficult to trace how far a conclusion hangs on one point, which may be very debatable in itself. It will not do to run before we can walk. Even in well-known times of Crete there is acknowledged difficulty in discriminating the differences between periods.

The great aim for research at present is to equate the Oriental civilisations with the Western barbarisms. We must get our scale of sequences (or of years, when we can agree about them) settled in the earliest and most continuous civilisations, before we can understand the fleeting chaos of conquests and migrations which are indicated by the changes of products among the unlettered races.

The work begins with noting the importance of the change in the world produced by gaining the use of copper, and the consequences in general culture. We can understand this, perhaps, by seeing how much the world has altered by the use of steel in the last generation, and how it is now altering by beginning the Aluminium Age which makes flying possible. The scarcity of copper even when known (as aluminium was thirty years ago) has prevented it being often found in early remains, but it is claimed that "whenever excavations of any extent are carried out in Asia, the earliest layers not only contain metal, but the originality of the shapes of these earliest copper implements proves that we are already entitled to speak definitely of a Copper Age." In evidence of this there are quoted Hissarlik I, Yortan Kalembo (in Mysia) and the first settlements at

Anau in Turkestan and in Susa. In Egypt the true Copper Age is considered to be later, and not to have begun till the break up of the Gerzean period at S.D. 60; the earlier tools are regarded as mere copies of such in bone, and not as showing any appreciation of the uses of metal. This change is looked on as due to intercourse with Asia, probably from the Caucasus.

The early civilisation of Greece is discussed, which began with Neolithic folk living in open villages of huts in the plains; these were attacked by a more powerful race which made fortified hill settlements and dwellings with the large hall or *megaron*. The new-comers brought new types of pottery "and also probably copper." Seeking for the source of these people, first the "Black Earth Region" is described, from Transylvania to Kiev, some 400 miles. The pottery has the spiral motive of decoration, proceeding to linked S-spirals covering a field. This culture is the earlier one in Transylvania at Erosd, where it is followed by the Danubian style with less elaborate motives, largely prick patterns and diagonal chevrons, with simple spirals, and the beginning of copper. This Danubian culture almost isolated Greece from the Black Earth styles. The source of copper, however, was Asiatic in Central Greece and the Aegean. In south-east Europe copper is earlier and commoner wherever intercourse with Asia was easy. At Vinça, near Belgrad, there are signs of very early connection with the Troad, and the Danubian influence is seen in Macedonia, Thessaly, the Cyclades, and even Crete; ultimately this phase gave way to directly Asiatic influences in the Aegean. The Danubian immigrants are betokened by their polished carbonaceous pottery, with burnished chevron lines, and some white painting. The very shallow black pans (so-called "frying pans"), with spirals and other patterns, are of Danubian style. [The purpose of these flat vessels may be for water-mirrors, as the elaborate decoration suggests objects of luxury rather than for hard use.] The coming of the Copper Age from Western Asia influenced all the eastern coast of Greece, and the importance of the Cyclades as stages of transport led to their active civilisation which died away later. Crete had a Neolithic Age which left 25 ft. of deposit, now under Knossos. It shared with Anatolia and Southern Europe the ideas of the Mother Goddess figures, and the conoid stone axe. Such is the outline of the ground before the Copper Age, but it would be impossible here to enter on any of the details on which the results depend.

The civilisation of Western Asia has a technique of pottery in common with that of the Danubians, but the forms of vessels and the motives of decoration widely separate the two regions. In place of the Danubian spiral there is in Asia vertical decoration round the shoulder. The distinctive forms at Hissarlik I (Troy) and in Anatolia are the beak-spout jug, the cylindrical neck of vases, the bird vases, the pilgrim bottle, and the strainer vase with a side handle. The black deoxidized ware of Hissarlik I was supplanted in the second period by a partly oxidized brown ware. [This change is like that at Badari from black to brown, then to purple, and finally to brick-red pottery. This order may be reversed, as the Gaza jars, which were red in Roman times, though the same form is now baked black.] The use of the potter's wheel follows on this.

In Syria and Palestine the types of red-slip ware, and painting with lines or geometrical patterns derived from straw or rush binding, are approximately of the same age as the similar ware of the Ist dynasty in Egypt. Turning to Cyprus, the characteristic red-polished ware belongs to that of Southern Anatolia. Cyprus, with its store of copper, must have prospered early, and the pottery rapidly

improved there. Coming down later, there is the influence of Syria in using a white slip with orange-red painting, which belonged to North Syria, and extended to Assur and Susa II. This style lasted in Syria for a thousand years, from about 2800 to 1800 B.C.

Next is noticed the connection of Asia with the Aegean in the Copper Age. This is a very complex field with influences from many sides. The transitions are best preserved in Crete, but there the stages of Neolithic, Aenolithic, and Copper merge gradually one into the other, but yet are due to foreign intrusions. In Anatolia the beak-spouted jug is technically identical with that in Greece. Another form in common is the capped vase with vertical handles, found at Hissarlik in silver. Burnished pottery also is in common between Crete and Anatolia. The Aegean, however, soon outstrips the lethargic Anatolian development. In Crete the wheel pottery is early Minoan, while in Hissarlik II it is of the Middle Minoan I period. Eastern Crete is considered to have been in advance of the west in absorbing Anatolian methods. The conclusion is that South-West Asia Minor, which colonised Cyprus, also was the source of Anatolian influence in Crete. [This would be parallel to the great importance of Rhodes as a centre of commerce and culture in later ages.]

The civilisation on the bare rocks of the Cyclades depended entirely on a transient period of active trade across the Aegean. [But as the size of shipping increased, the direct voyage from Asia to Europe was preferred.] The rise of Hissarlik as a link across the sea ruined the island trade. The spiral decoration is considered to have come from the Danubian culture to the Cyclades, and thence to Crete, where the running band of spirals appears, as on the Danube. This beginning of the Copper Age is termed the First Early Aegean Period. It was of considerable length; the Cycladic "herring-bone" ware was developed and influenced Crete; figure vases extended. The Sumerians or Sumerianized Asiatics came round Arabia into Upper Egypt. The North Syrian civilisation, with polychrome pottery, extended to Assur and Susa II. As Susa I had copper before other lands, the metallic source seems to have been to the east of that.

The Second Aegean period begins as equivalent to the Ist dynasty in Egypt. It covers the second and third sections of the Early Minoan in Crete. In the Cyclades only the islands with internal resources could hold their own. Phylakopi was founded, as also Tiryns and perhaps Mykenae; Hissarlik II grew with trade; relations of Egypt with Crete extend into the IVth to VIth dynasty.

The next upheaval started far in the north-east; it brought the Gutiu from the mountains of Persia or Kurdistan down on Sumer and Akkad in the Babylonian plain, it drove the Amorites into Mesopotamia, and the Syrians into Egypt under Pepy II, forming the VIIth and VIIIth dynasties there. Crete in the third section of Early Minoan seems affected also by the Syrian movement. The spiral ornament also comes in there from the Danubian region, and the "monkey-like imp" from North Syria, whence also it appears on the buttons in Egypt.

The Cycladic civilisation spread not only into various sites in the Gulf of Corinth, but westward from that to Leukas, where a variety of decorated pottery is found. Also the same influences came round the south of Greece and into Apulia and the Adriatic. The First Siculan Period continued the local Neolithic usage in pottery; the forms point to a source at the head of the Adriatic and the southern Danubian style, while the decoration is related to that of Central Greece. The Second Siculan Period also has northern features, such as are from the middle Danube, as well as Aegean influences.

The Middle Aegean or Bronze Period is marked by the rise of Hissarlik II, and this is connected with the invention of a regular 10 *per cent.* bronze alloy. The types of jewellery and bronze work found in the Troad are linked with those of the middle and upper Danube. Such types also belong to the Caucasus, which, with its wealth of metals, was probably the starting point of this civilisation. The copper and silver necklets from Kahun and Abydos are Caucasian in form, and the same are found on the way at Byblos. The bronze prongs from the latter place are only paralleled at Astrabad north of the Caucasus. In Mesopotamia the earliest copper tools are similar to those of the Caucasus. [But as copper seems to have first come from the East into Mesopotamia, the transit of types would seem to have been from there northwards into the exploitation of the Caucasian resources.] This period may be dated about 2800 to 1800 B.C. for the duration of Hissarlik II, or would have begun earlier if the chronology is not cut down. The burning of Hissarlik II may have been due either to the Indo-European migration, or to the Hittites who sacked Babylon about 1925 B.C. The Aryans did not affect the population of Western Asia, but only the language and culture, indicating a small minority holding power by its ability.

The Syrian influences carried by the Hyksos immigration to Egypt lead to the beautiful ruddy smooth pottery, used for figure vases, usually of seated girls, which belong to the beginning of the XVIIIth dynasty. [But the cross-lined vases so common in the XVIIIth dynasty must not be assigned to Hyksos influence, nor perhaps the figure vases, as they are unknown before the Syrian wars of Tehutmes III, who brought back Syrian workmen.] A kaleidoscope of fragments of relationships about the Hittites, Indo-Europeans, Thracians, Danubians and Phrygians baffles analysis as yet. Finally, there is a notice of the Chinese painted pottery, and queries as to its relationship. Nothing more can be really built into place until Asia is tranquillised, and research can be carried across the unknown regions. Such is the outline that can be gathered from the maze of material here presented, and some reflections upon it are added in brackets [] as we go along.

The questions specially affecting Egypt need more notice here, as difficulties appear which must be considered in detail. The theory of an important State having existed during late predynastic times in the Western Delta is accepted by Dr. Frankfort as a basis for the carrying over of Egyptian ideas and things to Crete. But such a State seems entirely theoretical. The "chief of the lake" who was conquered by Narmer cannot have ruled in the Delta, as there were no lakes there. The lakes, so familiar to us, and which colour all modern writing on the subject, only came into existence since the subsidence of the Delta. Alexandria was 20 or 25 ft. higher until Roman times, and at such a level the present Lake Mareotis would have been dry land. The only important lake in Egypt was that of the Fayum, far larger then than it is now, and Narmer is represented as conquering the *Ua she* or "chief of the lake," therefore, in that district. No trace has been found of any remains of a prehistoric civilisation in the Western Delta; it is a blank, archaeologically, and we can only presume that it had historic inhabitants, by the traces of flint knives and pottery of the IInd dynasty in a mound near Alexandria. Something more may be found any day, but, until it is, the theory remains entirely in air, and we cannot base any conclusions upon it. The remains of submerged quays at Alexandria, which have been claimed as the port of early shipping, are certainly the quays of Ptolemaic time, above the sea-level then, and are no evidence of earlier commerce in the district.

The origin of running spirals is attributed to thread or wire work. This is entirely a theory, and is difficult to reconcile with the dates. The single S-spiral is fixed in the Neolithic Age, on the Danubian pottery; it cannot have been derived from metallic wire in those times, nor would a scrap of thread be a likely source. The linked spiral naturally arises from the single S, and was also evolved before the use of metal (*see* p. 18, fig. 3). It looks as if the spiral was simply a decorative form, not derived from artificial material, but rather from nature, in copying the coiling of tendrils. Such pure decoration is seen in the abundance of various plant forms on the earliest decorated pottery in Egypt.

The shortened chronology is definitely accepted, on the broad ground that the longer record by the Egyptians leaves too large a space for the changes observed in development elsewhere. Such a preference for intuition concerning the rate of development, as against the written record, shows a robust faith in personal belief. What is there to show the time-scale of movement, apart from a continuous record and a series of monuments? We are assured that the Hyksos subjection of Egypt belonged "no doubt" to the general movement of the Hittite sack of Babylon and the fall of Hissarlik in the XXth century B.C. But no kind of evidence is given. What suggests that the whole rate of development, as here conceived, is too rapid, is the conclusion that "there were great crises which succeeded each other at more or less regular intervals of five to seven centuries, . . . in which large movements of people . . . change fundamentally the existing conditions." Now such crises are a regular recurring feature in recorded history, and the length of the cycle averages fourteen centuries, varying from eleven to eighteen, in various times and countries. In place, then, of estimating them intuitively at five to seven centuries, the real period is likely to have been at least twice as long, in accord with the record preserved, and harmonising with Dr. Frankfort's remark that "the simpler a civilisation the more difficult it is to introduce any change, and the first changes will take longest to be effected."

The arguments from similarities of decoration being contemporary are the main ground of chronologic inference. If accepted, then another such case must come in to the reckoning, namely the close similarity of the cordage decoration on vases at Kish before 3000 B.C. (on the short dating), to the pattern introduced from abroad in the XIIth or XIIIth dynasty in Egypt, which rapidly decayed there. This would place the movement from Babylonia to Egypt at the Egyptian date of such forerunners of the Hyksos. (ANCIENT EGYPT, 1926, p. 102.)

The Caucasian type of necklets found at Kahun and Abydos, of the XIIth dynasty, helps us to realise how Caucasian sources may have also come in earlier, and be preserved in the geography of the Book of the Dead. In connection with Kahun, the idea that it was only a workman's town, and could not have any wealthy inhabitants, is hardly compatible with there being ten large mansions of sixty rooms each, occupying nearly half the site. The secondary position of Egypt in metal work is recognised, as copper in Susa is definitely placed before the use of it in Egypt. Such are the principal matters which concern our view of Egypt in this work. We have to thank Dr. Frankfort for his prodigious industry in collecting and co-ordinating such a mass of material, from personal inspection and from publications. The great value of his work to all students of early civilisation is unquestionable, though a touch of Euclidean demonstration, and more recognition of countervailing material, might have helped its reception.

Ancient Egyptian Materials. By A. LUCAS. 8vo. 242 pp. 1926. (Arnold & Co.) 7s. 6d.

Hitherto the Egyptologist has been left to find out what he can about the materials before him, usually stumbling into many absurdities, and pulled up by the geologist with blank contradiction, which was often ill-founded. We were lectured about alabaster being aragonite, while alabaster was the original name for the material; and, after all, Mr. Lucas agrees that between the two names for different forms of calcite, the Egyptian stone is truly alabaster. We were ordered to abolish the name diorite, until a geologist examined a sample, and agreed that, after all, it was technically diorite. We were told that the Zer jewellery contained green glass, but now we learn that "all the questioned material is undoubtedly turquoise," as at first described. It is comforting when a technical authority rolls back the arrogance of those who pontificate so freely.

Not only has the author the training for the subject, but he also has at hand many valuable reports of recent official work which are almost unknown in England, and which correct various beliefs of the "times of ignorance" before expert studies. Thus, he has been able to supply a valuable addition to our technical knowledge, explained in the plainest terms for those who require it. The chapters are on Building materials; Faience, Glass, and Pottery; Metals; Mummification materials; Oils, Fats, and Waxes; Pigments and Varnish; Precious and semi-precious stones; Stones for monuments; Textiles, Leather, and Dyes; Writing materials, and a few other substances.

Some additional notes may be made here on these subjects. P. 33: Quartz rock was collected in the form of pebbles for flooring the glazing furnace; it was thus disintegrated by heat before being crushed, and was available where wanted for making glaze. P. 38: Glazed stone is now known in the earliest civilisation (Badarian) which seems to have been derived from elsewhere. P. 42: The earliest glass known in Egypt—the Hat-hor head—is unquestionably of the middle of the prehistoric age; as its colour shows a highly skilled production, it probably originated in an Asiatic source, from which later isolated specimens also came, by trade. In the valuable analyses of glass, P. 232–3, the colours should essentially be stated. P. 57: The prehistoric pottery in most instances owes its black to the deoxidation of the haematite facing; this is proved by the casual appearance of the black on the wrong parts, owing to the pot falling over in the ashes. No applied colouring could be so accidental and misplaced.

P. 78: In naming brass, it should be noted that the bulk of Roman Imperial coinage is of brass, so there was a ready source at hand. P. 82: The cutting of hard stones in prehistoric Tiryns was by a copper blade with inset teeth of emery, a fragment having been observed in a saw-cut. P. 98: The iron beads could only have been of malleable iron, as they are made by coiling a leaf of metal. P. 102: Mild steel was already discovered in the VIIth century B.C., as the tools of that age can be permanently magnetised, and have hardened edges. P. 139: Though the blue grit can be fused, it does not produce blue glass, but is decomposed as a dull green slag. P. 149: The albumen for a fixative could have been abundantly obtained from the eggs of ducks, geese, and other birds. P. 157: The original names of samples of the more usual stones are given in hieroglyphs on the Kennard tablet, so that there is no uncertainty about those.

P. 193: The use of everyday clothing in burials, after mummifying ceased, should be remembered. All our Coptic textiles come from this source. P. 199:

Indigo is only on late wrappings, about the XXIIIrd dynasty and onward. P. 202 : Papyrus of the Vth dynasty is known. P. 209 : The emery used in Egypt was dark brown, and like that of the Aegean. P. 210 : The example of graphite comes from the town of Gurob, not from a tomb. P. 211 : The commonest source of ivory was the hippopotamus.

Finally, it is the most vexed question at present how much the Egyptian discovered and how much he borrowed. All that we can do is to study the earliest examples, and remember that we know nothing yet about the condition of Asiatic culture at those times. The indications of sporadic use of glazing, glass, and alloys, strongly suggest importation.

Ancient Egyptian Metallurgy. By MAJOR GARLAND and C. O. BANNISTER. 8vo. 208 pp., 113 figs. 1927. (Griffin & Co.) 12s. 6d.

In this volume we have the work of a specialist in metals, head of the Cairo citadel laboratories, who unhappily died before this work was finished ; it was then edited by the Professor of Metallurgy in Liverpool. On the chemical side, therefore, the authority is valuable, but, unfortunately, neither writer was aware of the specimens which are essential for forming a judgment about the ancient methods. So often have misapprehensions appeared on such matters, that it is desirable to take this opportunity to dispel them by reviewing the known facts. First, we may notice the illusions in practical matters, which should be clear to anyone writing on the subject. The use of open moulds for casting copper is doubted, but the actual moulds are in University College. The Egyptian metal work was not like the Syrian, with detail all round an object, unless cast by *cire perdue*. The flat open castings were the basis for hammer-work. In *cire perdue* work of the XVIIIth dynasty, there is no trace of any struts to connect the core and mould ; certainly any iron wire struts, here named, would be obvious if present. Metal spinning was very usual in Roman Egypt, and there is no doubt about the Ramesside example (in U.C.), as the in-turned form of the edge—an anti-splash bowl—could hardly be made otherwise. The surface is evidently spun.

Regarding early iron, the author is very insistent on iron tools having been used for working granite in early times. It is urged that, when buried, iron would disappear by the soluble salts formed in the soil. On the contrary, the lump of iron, which was found with copper axes of the VIth dynasty at Abydos, was a firm mass of rust, in spite of the contact with copper leading to galvanic dissolution. At Gerar, which is much wetter than in Egypt, the masses of iron rust, large and small, are quite shapely, and retain the form of tools since 1200 B.C. It is argued that iron chisels are the only possible means of cutting granite ; but such tools would inevitably stun the granite, and a large amount of emery grinding would be afterwards needed. The conclusive matter is the cutting of granite sarcophagi by tubular drills and by long saws, the faulty work of each being visible inside and outside of the sarcophagus of Khufu. A deep tube-drill hole, with the core still sticking in it, was cut in granite at the temple of Khafra. Casts of all these evidences, and actual cores of granite and porphyry, are in University College, and it is utterly impossible for any of this kind of work to have been done by iron chisels, or by any percussive tool. " Practical men " are appealed to ; but such practical engineers as Sir John Fowler and Sir Benjamin Baker were, forty years ago, enthusiastic about the fine work of these drillings in granite.

The specimens have twice been published in illustrations, and there is no excuse for not knowing them when dealing with the subject. The use of hand-sawing into granite by emery-pointed tools can be seen on the fallen obelisk of Karnak. In each corner of the hieroglyphs there is a minute drill hole, about the size of a quill; the side cuts around the hieroglyphs run into these holes; and when starting the work the hand tool had often slipped aside, and left scratches on the polished surface of the granite. No chisel could have made such marks, nor could it have made the corner tube holes. The chapter on the Iron Age in Egypt only confuses the subject by ignoring the conclusive facts.

It is said that it is strange that Egyptians did not, like Syrians, strengthen bronze castings by iron rods. But such rods are found in some Egyptian bronze castings of rails (in U.C.). The first axes made in metal are stated to have two projecting lugs, but from the prehistoric age to the IVth dynasty there were no lugs, and such were only well formed by the XIIth dynasty. A socketted hoe is figured as an "axe head"; it would be too weak to cut anything but light soil, and it has the blade on one side of the socket, so it could not work as an axe. A razor, of well-known form, is figured as a "cutting-out knife"; an adze is figured as a "graver." The use of tools should have been better understood. The ladder is said to have been used in the XVIIIth dynasty, but it is figured in the Vth dynasty. Rivets are said not to have properly shaped heads; but good domed heads are copied in pottery imitations of metal vessels of the pyramid age. It is remarked that there are no representations of the method of working bronze in early Egypt. But bronze was not yet in use there, and, if copper is intended, there are many sculptures of copper workers beating and forming metal vessels in the Vth dynasty. In all these matters, some enquiry into the evidence used by other writers would have remedied the dogmatism of the metallurgist.

Unfortunately, the writers have also undertaken instruction in Egyptian history. The Egyptian is said to have been "second to no other people" in treating metals; yet the Syrians were far more skilled, all through history. It is stated that in Sinai "each mine was placed under a foreman, and a regular output of ore expected from it." In reality, the expeditions were stray visits there, at intervals of a few years, to discover and scrape up as much as could be got together. The division in dynasties is said to have been first adopted by Manetho; in reality the Egyptians recognised it all through, as the ruling family changed, and the first of a dynasty took a name imitating the founder of the previous dynasty. The XVth dynasty is said to be the "first experience of alien rule," ignoring the Syrian VIIth and VIIIth dynasties. The figure named as Rameses IV is certainly not his, by the form of the name, which belongs to one or another of the XXIInd dynasty kings. The Ethiopians are said not to have influenced the crafts of the Egyptians; they did not alter the style, but they effected a complete renaissance of the crafts on the lines of the earlier work.

Directions about cleaning and repairing antiquities of metal conclude the volume. The use of seccotine is recommended in spite of its miserable defects, while the celluloid cement which is faultless is never named. The false limbs for crippled statuettes, the making of which is carefully described, would ruin specimens for any reputable museum. A long chapter on the microscopic structure of alloys is a careful piece of work, but hardly within the usual opportunities or practice of archaeology.

Die Anfänge des Christentums im Rheinlande. By WILHELM NEUSS. 90 pp., 34 figs. 1923. (Kurt Schroeder, Bonn and Leipzig.)

The third chapter of this excellent treatise (*Rheinische Neujaarsblätter*, part 2) deals with the beginnings of Christianity in the Rhineland in the light of the monuments, by which some of the gaps left by the literary records may be partly filled in. The churches of St. Gereon's, St. Ursula's and St. Severin's in Cologne stand on old Christian cemeteries which were outside the gates of the Roman town. There are churches similarly situated in Trier and in Bonn. With St. Ursula's and St. Gereon's are bound up legends of martyrs, of which the nucleus is considered historical by the writer. There is, moreover, monumental evidence of martyrs at Cologne in the early Christian tombstone of a child called Rudufula, SOCIATA M(artyribu)S, "buried with the martyrs." It is, however, the smaller objects (ivories, glass-ware, etc.) which throw the most light on the origin of early Christianity in these parts. Most of these small finds have been discovered in graves. In view of the glass industry which flourished in Cologne, it is only natural that most of the finds there should be glass. The scenes represented on the oldest glasses (beginning of the 4th century) differ markedly in choice of subject and method of representation from the work of the later part of the century, in which iconography and technique are Roman, and point to closer connection with Rome. In the early glass the writer detects Oriental influence, particularly Egyptian. This may be observed in several scenes on the gilded glass from Cologne, now in the British Museum (No. 628), particularly in the presence of St. Thecla, an apocryphal saint to whom the Orient, Egypt, and Gaul remained faithful long after her early rejection by Rome. (This figure is usually considered to be Susanna). Christianity must have reached the Rhine from the south of Gaul, where the first Christian communities were largely composed of Orientals; it followed the route taken by trade, culture, and Roman dominion. A second source of Oriental influence is indicated by the ivories which have been found at Trèves. Many of these are probably Eastern work, and their presence may be explained by the fact that Trèves was, in the 4th century, a main junction on the roads used by pilgrims to the Holy Land from Gaul and the Rhineland. The holy places in Egypt were often included in these pilgrimages, and the finding at Trèves of a pilgrim's flask from the shrine of St. Menas may be readily explained in this way.



L. B. E.

An Egyptian Grammar, with Chrestomathy and Glossary. By SAMUEL A. B. MERCER. London, 1927

Grammaire de l'Ancien Egyptien (Hieroglyphes). By J. FARINA, French translation by R. NEUVILLE. Paris, 1927.



It is a true proverb which says that "it never rains but it pours." Scarcely was the eagerly awaited *Egyptian Grammar* of Dr. Alan Gardiner available to students when the two smaller grammars named above came to hand.



Professor Mercer's book confines itself to Middle Egyptian, and addresses itself solely to the novice. It is excellent in plan, but the text is too scrappy even for the beginner, and is only too often definitely misleading, while it is further marred by mistakes in translation as well as by misprints. A detailed list of errors would occupy too much space, but a few of the more obvious are mentioned below:—

P. 4, § 7. Table of Alphabetic Signs.— is called a club, and  tongs, although it has long been known that these signs represent respectively the teats

and tail of an animal, and a rope. Unhappily no list of signs takes account of recent discoveries in all cases.

P. 6, § 17.—It is regrettable that better specimens of modern written hieroglyphs could not have been provided for the student to copy. Habits of bad writing once acquired are not easily eradicated.

P. 10, § 24.—For  read .

P. 12, § 29.—The words *rtnw*, *b nw*, and *pnw* should be transcribed with one *n* only. *Bh^hnw* means "tower," "castle," not "house"; *s^hpr* means "to approach," "draw nigh to," not "to come," and the word for "bolt" is not  but .

P. 27, § 62.—In the paradigm of the pronouns there is no hint whatever that the dependent pronouns of the *wi*, *tw*, *sw* series serve as pronominal object of verbs, and § 64 only leaves confusion worse confounded. As it stands, there is nothing to show that the independent pronouns of the *ntf* paradigm could not be used as object or as dative!

P. 33 ff.—The treatment of the verb is quite misleading. There is no mention of the classification of the verbs according to the number of radicals, and the forms of the suffix conjugation are allotted moods and tenses as if the Egyptian verb were conjugated as in English; thus, *s^hdm.f* is called the Present Indicative. It is true that this is qualified in § 72, 2, but this use of terms of mood and tense can only confuse the student, who should be told quite plainly that these, as understood in modern European tongues, do not exist in Egyptian.

P. 35, § 77.—The Old Perfective (formerly called Pseudoparticiple, Professor Mercer's Conditional) of *s^hdm* does not mean "he is hearing," which would be *lw.f hr s^hdm*, but does mean "he is heard." Professor Mercer forgets that with transitive verbs such as *s m*, the Old Perfective is always passive in sense.

There are various errors besides these, and one can only regretfully record the verdict that this book is not a safe guide to the student nor a help to the teacher.

Prof. Farina's grammar is larger in scope than Prof. Mercer's, and has been much more carefully compiled. Unfortunately, however, its usefulness as a book for the learner is quite vitiated by the fact that no distinction is recognized between Old and Middle Egyptian, so that examples from the Pyramid Texts and from the XVIIIth dynasty occur on the same page, and the exceedingly rare duals of the demonstratives are included without any hint of their rarity, while it is further complicated by the peculiar system of transliteration adopted, which has found no acceptance outside Italy. The attempt to grapple with the vocalization of the verb-forms is praiseworthy, but shows, perhaps, more valour than discretion; our knowledge of these matters is too uncertain at present to justify such a wholesale reconstruction. Prof. Farina's desire to emphasize the Semitic relationships of Egyptian has led him into an unfortunate use of the term "permansive" for the Old Perfective; the latter certainly shows a close relationship with the Akkadian Permansive, but the two forms are not identical (on this point cf. Gardiner, *Grammar*, § 309, Obs. 1).

Finally, it must be admitted that both the books under review have appeared at an unfortunate time, and in view of the epoch-making discoveries in Egyptian syntax recently announced by Dr. Gardiner in his *Grammar*, any work now appearing on the subject which does not embody or discuss those discoveries is foredoomed to failure.

R. O. FAULKNER.

L'Egypte Musulmane. By Mrs. DEVONSHIRE. 8vo, 150 pp., 40 pls. 1926. Maison Neuve Frères, Paris.)

This book is a happy combination of the history of Arab Cairo, with the fine photographs by Major Creswell, who has made himself the historian of the architecture of that period. Such photographs demand publication, and for the public the historical setting and connection of them is necessary to understanding their value. The account of the history brings into clear view the astonishing medley of sources from which able men were turned up, one after another, to prove their skill in ruling. As a popular outline of more than a thousand years of an Oriental history this work should be very successful. In one little detail, the reader might suppose that the name Bab-el-Loun was the origin of the mediaeval Babilonne; the Roman name of Babylon, for the Kasr-esh Shama'a, should appear earlier.

Walks in and around Jerusalem. By J. E. HANAUER. Sm. 8vo, 414 pp., 219 figs. 1926. (Society for Promoting Christianity among the Jews.) 6s. 6d.

This description of the multitude of points of interest at Jerusalem will be very welcome to anyone intending to comprehend the maze of antiquity, legend, and superstition which has grown over the capital founded by David, upon the old Canaanite city. Only the long familiarity which Canon Hanauer has acquired in residence there could enable so comprehensive an account to be written. Such an excellent guide book should have the needful convenience of a map (preferably in sections), with the routes followed in the account, and references to the pages. Strangely, the main English centre of St. George's Cathedral is not mentioned, except by one reference to its library, nor is the Palestine Museum, which should be a main attraction to visitors.

Die bildlichen Ausdrücke des Ägyptischen—Vom Denken und Dichten einer altorientalischen Sprache. By HERMANN GRAPOW. 219 pp. 1924. (J. C. Hinrichs.) M. 7 (unbound, M. 5.75).

This book is a study and compilation of figurative expressions in Egyptian, and is an elaboration of an earlier pamphlet (*Vergleiche und andere bildliche Ausdrücke im Ägyptischen—Der alte Orient*, 1920).


Most of the texts from which the author draws his examples are given in Erman's *Literatur der Ägypter*, and may be studied in their context, as the references are given in the footnotes. The book, however, covers a wider field than Erman's, though Coptic texts are not included, and only a few examples are taken from demotic.

Its value to the student should be greatly increased when two proposed companion volumes are published, one giving the hieroglyphic versions of the quotations, and the other dealing with the subject from a historical standpoint. The present volume serves to familiarise the reader with Egyptian modes of expression, which are not so foreign as he may have supposed, since many things are expressed by us in the same way.

L. B. E.

JOURNAL.

Aegyptus, VII, p. 169.

LUDWIG KEIMER.—*Bemerkungen zur Schiefertafel von Hierakonpolis*. Dr. Keimer's interesting paper on the plant-forms of the great slate-palette of Narmer brings out some important facts. The group of plants on which the falcon stands are proved to be papyrus plants by botanical evidence, as was pointed out at the time of the discovery by Professor Petrie and Mr. Quibell. Dr. Keimer's argument, which is well substantiated, is that the stylised form represents the seed-bearing part of the umbel, while the involucre of bracts and the stems of the umbel are not indicated. In later times the side view of the papyrus has the involucre bracts carefully drawn, but the seed-bearing part of the umbel is reduced to two parallel lines in the Old Kingdom, though naturalistically expressed in the New Kingdom. The plants on the head of the slain enemy on the statue and vases of Kha-sekhem indicate, according to Dr. Keimer, the fact that it was the Papyrus or Delta people who were conquered. He makes a marked distinction between the papyrus on the Narmer palette and the lotus leaf which stands for the numeral, pointing out that the lotus leaf is always represented with the characteristic sharp cleft. He therefore refuses to accept the reading of "6000" for the group of the six papyrus stems on which the falcon stands on the palette, maintaining that the group has the same relation to the human head as the cluster on the head of the fallen foe. The oval below the six stems and from which the human head rises is equated by the author with the sign for "land," in the groups of both papyrus and lotus, as well as in the sign for "North." He brings forward a strong point when commenting on the horizontal wavy lines which cross the base of the "North" sign. These have usually been called water, but he claims that they are the stylised representation of the root-leaves. In support of this contention, he notes that the lower part of the sign is always painted a brownish-yellow, the actual colour of the root-leaves, and brings forward an overwhelming piece of evidence in the figure of a man bearing on his back a sheaf of cut papyrus, the lower part of the stems being represented covered with the same horizontal wavy lines as in the plant when growing (*Rock-tombs of Meir*, II, pl. 26). The last part of the paper is devoted to a consideration of the meaning of the falcon and a discussion of the opinions expressed by some German Egyptologists on the subject. By the analogy of the papyrus-group on the head of the slain enemy, he identifies the hieroglyphs  with the foe whom Narmer is about to strike. He points out also that the falcon has a human hand and arm, which would assuredly not be the case if the bird represented the god Horus. He therefore concludes that the whole group represents the conquest of the North by the King, and suggests that the conquered enemy awaiting the death-stroke symbolises the Harpoon-nome, known later as Metelis.

M. A. MURRAY.

NOTES AND NEWS.

THE important position that the Galla race seems to have occupied in the IXth and Xth dynasties, and as ancestors of the XIIth dynasty, draws our attention to their character and organisation. Mr. Huntingford's summary helps in understanding these people, but we need to know more about their marriage laws, in view of Miss Murray's remark that consanguineous marriages in Egypt were frequent in families with the name of Uahka.

The new and arbitrary powers taken by the Department of Antiquities in Egypt now appear to be exercised to dissuade English excavators. It should always be remembered that such new powers were totally unnecessary for the authorities. Under Sir Gaston Maspero's law the authorities of the Department had (1) the right to make a half-and-half division entirely to their convenience. (2) If more than half was wanted, they had the right of taking everything on paying the costs of the season's work. This enabled the Department to take up all years of profit, and leave to the excavator all years of loss; "heads I win, tails you lose," is surely enough power for any Government. Practically it forced a compromise, such as the giving up of the Pepy copper statues against £200 share of cost. (3) The Government could, after division, prohibit exportation, and so bring the excavator to his knees. Such ample powers ought to have soothed the feelings of any bureaucrat; yet now the excavator has no rights whatever. No man may be employed, no visitor allowed, and no shed put up, without getting detailed permission from the Department. Enacting oppressive laws, and leaving much of them a dead letter, is not the way to rule.

It is hoped that next winter the British School will undertake systematic clearing on another Tell in the south of Palestine, which promises to carry back the Egyptian connection before the XVIIIth dynasty. This is much wanted in order to continue the series of dated objects which was obtained from Gerar. A serious difficulty arises from the short-sighted view of historical work taken in England. The Gerar series of objects from 1500 to 400 B.C. is not likely to be ever surpassed for its exact dating; it will always be the best guide through the archaeology of the Israelitic period. Yet there is no prospect at present of finding a room for permanent exhibition. There is no space available within the walls of the British Museum, nor in any College or Institute, to receive the basis of Palestine archaeology. The collection will need to be stored in boxes until it is clear whether a room can be had in London, or if it must be sent to the wider spaces of our Colonies or America. It is hoped to issue the volume on Gerar in a few months.

ANCIENT EGYPT.

WAXED TABLETS OF THE THIRD CENTURY B.C.

A CONSIDERABLE number of waxed tablets have been found in Egypt during the last half-century, besides those discovered elsewhere, as at Pompeii and Verespatak,¹ but those published below, though they contain only accounts, have a special interest, since they are, so far as I can discover, the earliest examples at present known. They were acquired, with many other objects from the Fayyum, in the season 1889-90, by Sir Flinders Petrie while living at Illahûn, and to his kindness I am indebted for permission to publish them. The various hands observable in them are all unmistakably of the 3rd century B.C., and almost certainly date from about the middle of that century, since they show a close resemblance to those seen in the well-known Zeno papyri. A further point of interest is that in several cases the wax is coloured red. I have in my transcript noted the colour of each page; it will be seen that the same tablet may have red wax on one side and black wax on the other. I am greatly indebted to Mr. C. C. Edgar for kindly looking at a few difficult passages where I had failed to obtain a satisfactory reading.

The tablets having been bought, their provenance can be determined only by internal evidence, though the fact that they were offered for sale in the Fayyum naturally suggests that province as the place of origin. This presupposition is supported by the evidence of the text. The only geographical names mentioned are Ptolemais, Memphis, and the Delta. The two last were clearly visited on the course of a journey, since we get first (ll. 83-85), expenses at Memphis, following an entry which refers to a disbursement (ἐν τῇ φυλακῇ); then (ll. 86-91) expenses in the Delta; and then, after an interval, receipts and expenses at Memphis (ll. 100-104), and in the φυλακή (ll. 105-106), in the reverse order, followed later (ll. 119 and 128) by references to Ptolemais. In the circumstances it seems very improbable that this is the Greek city in Upper Egypt. Almost certainly we may identify it with Πτολεμαῖς Ὀρμου, which Grenfell and Hunt (*P. Tebt.*, Vol. II, p. 400; *Fay. Towns*, pp. 12-13), place at Illahûn. The references to the place seem to imply that the writer was living in the neighbourhood rather than at Ptolemais itself. The great resemblance of the hands to those of the Zeno accounts might suggest Philadelphia (the modern Gerza) as the provenance, and of the fourteen complete personal names which occur there are only three (Horion, Aunas, bathman, and Lysis) which I have not found among

¹ For waxed tablets, see e.g. W. Schubart, *Das Buch bei den Griechen und Römern*, 2nd ed., pp. 23-28, and *Einführung in die Papyruskunde*, pp. 41-42 and 46; V. Gardthausen, *Griechische Palaeographie*, 2nd ed., Vol. I, pp. 42-45, and references there; E. Maunde Thompson, *Introd. to Greek and Latin Palaeography*, pp. 14-17.

published Zeno papyri.¹ All, however, are common names (a glance at the indices of *P. Cairo Zenon* or *P. Soc. Ital.* will show how unsafe a guide to identity such names are), and it is doubtful whether Gerza was producing antiquities as early as 1889. A site nearer Illahûn is more likely; perhaps even Arsinoe.

It is a matter of considerable difficulty to determine how the "book" of tablets was made up, since all the tablets were separate when acquired. That they did all belong to one "book" is certain from the exact agreement in size and in the position of the holes for the string. Some help in determining the order is given by the state of preservation, since, though all are imperfect on one side, the amount of loss varies. The dates which occur also help, but, unfortunately, the months are not named. That the account extends over more than one month is shown by the fact that day five occurs in l. 4 and again in l. 128, day 7 in ll. 41, 134, and 144. Finally, in one or two cases the arithmetic can be used as evidence.

To take first the state of preservation. The tablet numbered 67 has on the right (red side upwards) a straight edge along the line of breakage, except for a small indentation in the lower half. On the left (complete) side, a piece of the raised margin is broken off at the top corner. The tablet is in two pieces. 68 is undamaged on the left, broken in a fairly straight line on the right, but with a larger indentation than 67; it is also in two pieces. 69 (one piece) is complete on the left, and has on the right an indentation of about the same size as 68. In 70 (one piece, complete on left) the indentation is slightly less than in 69. 71 (one piece, complete on left) is not so deeply indented as the preceding, but an additional length of tablet is lost above the indentation. A very similar shape is seen in 72 (one piece, complete on left) and 73 (do.). These facts indicate that the tablets, when combined together, were in the same order as that followed in the above description. There is room for doubt as to 69 and 70, which might be reversed, but the order adopted is confirmed by the fact that 71A must follow immediately after 70B (see below).

The book, however, even if made up in the above order, might have been begun at either end. That the order of writing was from 67 to 73, not *vice versa*, is shown by the following considerations. In l. 4 (67A) day 5 occurs, in l. 30 (68A) day 6, whereas l. 41 on the other side of the same tablet mentions day 7. As mentioned above, ll. 78-91 (70B) clearly record expenses on a journey to the Delta *via* Memphis, whereas ll. 99-106 (71A) refer to the return journey. The arithmetic runs on from 71A to 71B, the total in l. 112 being that of the items recorded in ll. 103-111. The same is the case (though there is an arithmetical blunder—see l. 127, note) with 71B-72A. Moreover, l. 99 (71A) mentions day 11, whereas expenses from the 12th to the 14th are recorded in l. 116 f. (71B). In l. 128 (72A), day 5, clearly of another month, is recorded.

There is, indeed, one difficulty. If 72 is arranged in such a way as to make the shape coincide with that of the adjoining tablets, the writing on both sides is the opposite way up to that of the others, and the side here numbered 72A comes second. If the tablet is arranged so as to bring the writing into conformity with that of the others, and to place the sides in the right order—72A following 71B—the shape does not coincide with that of 71 and 73. There can be no doubt,

¹ I have not counted the imperfect [...] probably a name, of l. 45. For the Zeno papyri, see *P. Soc. Ital.*, IV-VII; *P. Cairo Zenon* (2 vols. now published); Rostovtzeff, *A Large Estate in Egypt*, 1922. I must explain that the method of referring to papyri in this article is in the main that followed in the *Archiv für Papyrusforschung* and in the *Oxyrhynchus Papyri*.

therefore, that the tablets, when written, or at some subsequent time, were separate, and that when they were finally put together and left in the position where they were discovered, tablet 72 was accidentally inserted the wrong way up.

It is a noticeable fact that several hands occur. It is by no means easy to distinguish them exactly, but that two or three writers used the tablets is beyond doubt. The general character of the accounts is, however, much the same throughout, and the same names recur (*e.g.* Horion and Heraclides, or one of them, ll. 5, 31, 42, 51 and 152), Philon and Straton (or one of them, ll. 8, 43, 52, 100, 120 and 135). In all cases, too, where a verb occurs (ll. 63, 65-67, 78, 98, 100, 113 and 119) it is in the singular. In ll. 63, 65-67 (hand C) and 78 (hand D) it is in the second person, in the other cases (hand D) in the first. The identification of these hands is not certain, and it is a difficulty that the same writer should use both persons. The natural assumption would be, that where the second is used we have a clerk keeping his employer's accounts; where the first occurs the employer himself. But it is possible that in all cases the writers were clerks, and that one of these (D) was entering the accounts of a journey he had undertaken on his employer's business and with his money; or the hand of 70B is perhaps to be distinguished from that of 71.

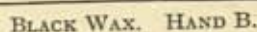
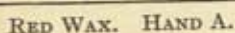
The expenses entered are largely for provisions. Several payments are made for bathing expenses, one (ll. 148-150) for the washing of clothes. Two loans are recorded (ll. 46 and 136 f.). There is a reference to an *ἐπιδείπνον* at Memphis in l. 83, and the bread at the house of Nicion in l. 43 f., and the wine at that of Callicrates in l. 74 f., may have been consumed at *ἑσπῆραι* (*see, however, Sir Flinders Petrie's note below*). One payment for barley for baggage animals, no doubt in connexion with a journey, is recorded in l. 122 f. Besides the journey with which ll. 78-121 are concerned, another (shorter) one seems to be the subject of ll. 122-133, and there is an entry for *πορθμῆιον* in l. 16. Several of the purchases of provisions were for slaves or "boys" (the occurrence of both *παιδάρια* and *παῖδες* in l. 115 f. shows that the words were used in different senses).

The occurrence of the words *τῇ αὐτῇ ἡμέρᾳ* in l. 1 shows that tablet 67 was not originally the beginning of the "book." If, therefore, it is correctly placed at the beginning, a tablet or tablets must have been lost, a supposition supported by the non-occurrence of any general heading.

[The foregoing introduction and the notes to the text were written before I had seen Sir Flinders Petrie's ingenious reconstruction of the events concerned. I have thought it better to leave them as they stand, since they form the basis on which his hypotheses rest].

2. -ε (*see* ll. 18-29, *note*). The amount for vinegar is lost at the end of the line.
3. —. The wax is gone here, but the bottom edge of the lacuna is definite enough to suggest an intentional groove, which extends beyond the upper part of the gap on both sides, so that the l-obol sign is more likely than any other symbol.
κῑκῑ : *κῑκῑ* is croton or castor-oil, used largely as an illuminant. After it is a vertical stroke, which may be accidental.
4. ε̅ : The date, 5th of the month.
5. Ὡ[ρ]ῶνι κτλ. (*cf.*, *e.g.* l. 42). The second ι is so read on the supposition that it coincides with the top of the ι of Ἡρακλίδῃ in l. 6.

6. Ἡρακλίδηι: l. Ἡρακλείδῃ. The confusion of *ει* and *ι*, universal later, is less common in texts of the 3rd century B.C., but quite established then; cf. Mayser, *Gramm. der griech. Papyri*, Vol. I, pp. 87 ff. There are several examples in this account.
 8. Στρ[άτω]νι. The ρ is inferred only from the shape of the edge of the wax. For Philo and Strato, cf. l. 43 f.
 9. —ε. The horizontal stroke does not touch the curved line, hence it is possible that the true reading is —ϵ, i.e. 1½ ob.
 11. —εχ = 3 chalci (¼ ob. + 1 ch.).
 13. Neither ἐρέβινθοι nor πλίνθοι can be read. The traces suggest κρινθο.
 14. ἐ]ν Αὐ[ν]ᾶτι: "to the account of Aunas"; a common locution at this period. βαλανί: l. βαλανεῖ (cf. l. 6, note).
 15. Qu. [πρά]σα (cf. l. 95)? But not more than two letters would be expected in the lacuna.
 17. ἀμίδες. Very little of the α remains, and the word does not occur in Preisigke's *Wörterbuch*, but α is strongly suggested by the traces, and it is doubtful whether any letter preceded.
 - 18–29. These lines are quite obscure. It seems impossible to discover any consistent ratio between most of the sums set down, or between any of them and what precedes. It may help the reader to follow the arithmetic here and elsewhere if I explain the symbols used: —χ = 1 chalcus, —ε = ¼ ob., ϵ = ½ ob., — = 1 ob., = = 2 ob., / = 3 ob., /— = 4 ob., / = 5 ob., † = drachma, / = γίνεται (total). The obol contained 8 chalci, the drachma 6 obols. A figure (α, β, etc., e.g. l. 21) standing alone denotes drachmae.
- The last two figures in the amount on the right of l. 18 (5½ ob. 1 ch.) recall the entry ¼ ob. 1 ch. in l. 11, but this amount cannot be the sum of all that precedes, the visible amounts adding up to more than 6 ob., nor even of all the entries since the 5th day of the month (l. 4), since those visible add up to 5½ ob. 1 ch., without including the amount (1 ob.) at the beginning of l. 18, or allowing anything for the entries lost in ll. 7, 10, 12 and 13. On the other hand, the sum in l. 21 (preceded by /, γίνεται) is the correct sum of the 5½ ob. 1 ch. in l. 18 and the separate entries in ll. 19–21, excluding the last item (2 ob.), and it is possible that this or one of the other entries of 2 ob. may have been accidentally omitted. ε may denote the day of the month, and, if so, the first column may contain entries for a preceding day; but those in column 2 do not correspond with those in ll. 5 ff., nor can the total in l. 23 be brought into relation with what precedes. The whole section is a mystery. At the right bottom corner is a large cross of the form ×, no doubt a mark of revision. Add χ after —ε in l. 27. Add · before — in l. 18.
30. Ἀρτε[μειδώ]ροι. Since this was first read, a piece of wax has broken away, and the letters *ρτε* are now lost (a trace of ρ remains). Much of the wax on this page has gone, and a few marks which appear at places on what remains on the right side cannot certainly be identified with definite characters.
 31. Ἡρα[κλείδῃ. ρα now lost.
 38. τοῖς π[ρ]οῖς. Very doubtful, but likely (cf. ll. 4, 41, etc.).
 39. βαλανεῖον. ν and ον now lost.



- E 3

61. The loss of the figures in ll. 57-60 makes it impossible to say whether this is the total of those lines only or includes entries in the previous tablet. The relation of the total in l. 62 to this is also obscure, but its relation to what follows is clearer. Line 63 evidently means, "You received [to your credit] $1\frac{1}{2}$ ob." In l. 64 a further receipt of 4 dr. 2 ob. is recorded, and the sum of these two receipts, which should be 4 dr. $3\frac{1}{2}$ ob., is given as 4 dr. 4 ob. Presumably a ϵ has been accidentally omitted after δ =. Finally the credit total of 4 dr. 4 ob. is deducted from the total expenditure of 4 dr. 5 ob., leaving a debit balance (*ὑπερανηλίσκεις*) of 1 ob. Lines 66-69 are again difficult. In l. 66 is recorded a credit of 4 dr., in l. 67 a debt of 3 dr. $5\frac{3}{4}$ ob.; but in l. 65 the overdraft was only 1 ob. It almost looks as if the author of the account had deducted the 1 ob. from the sum in l. 66 (where ϵ - ϵ can be supplied, the wax being broken away here), and then inadvertently counted the result, 3 dr. $5\frac{3}{4}$ ob., as a debit, instead of a credit, balance; but such blundering is a little difficult to accept. A further item is added in l. 68, and the new total correctly given as 4 dr. $2\frac{3}{4}$ ob. in l. 69. A cross (+) is placed at the right bottom corner. In l. 64 transcribe α .
68. *Ἡλιόδ[ω(ρωί)]*. Edgar. The reading is, however, very doubtful.
70. Edgar suggested *ἦς ναῦλον*, but what could *ἦς* refer to? There seems to be a stroke over η . If *ις* (= *εις*) is correct it must have been a later insertion, as it is much cramped, but it is very doubtful, and after ν , σ is a better reading than α .
72. *οφειλήματος*, but the reading must be regarded as doubtful. Not only are some individual letters, especially μ and α , far from certain, but the confusion of η and ι is not very likely at this period (see Mayser, pp. 82-85).
73. Cf. l. 43, note.
75. [*εκ*] *τοῦ Δέλτα*. Edgar.
/ α ϵ , the total of ll. 74 and 75, which should, however, be α — ϵ ; hence both these items refer to the feast at the house of Callicrates.
76. The total of ll. 70, 71, 72, and 75 (the sum of 1 dr. $0\frac{1}{2}$ ob.). The wax is broken away before (*γίνεται*), but no doubt nothing preceded.
77. / \vdash ς ϵ , i.e. the 5 dr. $5\frac{1}{2}$ ob. of l. 76 plus the 1 ob. of l. 77. A cross (x) occupies the right bottom corner.
80. \cap = *λοιπαί*, i.e. the remainder, after subtracting 2 dr. from the 4 dr. $2\frac{3}{4}$ ob. in l. 78.
82. At the end of this line is a cross (x).
83. *ἐπιδείπνoui*. This seems more likely than *ἐπὶ δείπνοι*.
85. / = τ . The correct total of the sums in ll. 82, 84, and 85.
86. *Δέλτα*. Edgar.
88. = : more like ζ , having been made without raising the pen, but it is confirmed by the total in l. 90. *Φανη()*, e.g. *Φανήσει*, *Φανήτι*. But *Φανή(τι)* could also be read, and the ϕ is by no means certain.
91. This line contains (1) the sum of the totals in ll. 85 and 90; (2) the remainder after deducting this from the 2 dr. $2\frac{3}{4}$ ob. in l. 80. Very little of the τ remains.

68A

30 $\bar{\varsigma}$ Αρτε/μιδῶρῳ?

0 Ἡρακλείδῃ?

Αρτε/μιδῶρῳ

Χοῖρος

35 λάχανα

κρέα

κεκι

0 ὀξος

40

50 τοῖς παιδαρίοις

εἰς βαλανεῖον

1 α 5 ζ

RED WAX. HAND C.

68B

0 τοῖς παιδαρίοις ἄρτοι =

0 Πρίωνι καὶ Ἡρακλείδῃ =

0 ἐν τῇ Νικίῳ νοσῶντος φίλων

καὶ στρατῶνι ζ

45 .. κερα

εἰς βαλανεῖον

=

ὀξος ζ

? πρῶτα = ζ

50 ἄρτοι τοῖς παιδαρίοις =

Πρίωνι καὶ Ἡρακλείδῃ =

φίλωνι καὶ στρατῶνι ζ

χρος

55 ..

λάχανα

ζ

α

α

BLACK WAX. HAND C.

69A

0 ὀξος

• κυβικόν

• Ἡλιοδώρῳ ἄρτοι

60 σείτου Ἀρμάε(ς) (βαλανεῖ)

1 α 5 =

1 δ 5 =

εἶχες - α

ἀλλας δ = 1 δ 5 -

05 ὑπερανηγλίσκεις -

[ἄλ]λας ἔχες δ

0 [ὀ]φείλεις γ 5 = α ζ

καὶ Ἡλιοδ[ώρῳ] 5

1 δ = α ζ +

BLACK WAX. HAND C?

69B

0 Ἡῖς μαύλον 1 γ 70

• Ἡλιοδώρῳ 5-α

• ὀφελίματα(ς) α α

• ἐν τῇ Κυλλικρατίου

οἶνος = α ζ

75 ἔκ τοῦ Δέλτα οἶνος 5-α ζ / α 75

1 ε 5 = α

5 - 1 α 5 α

X

BLACK WAX. HAND C?

92. There is some wax left in the early part of this line, the breaks in which could be read as letters, e.g. $\beta\alpha$ is possible at the beginning. $\epsilon\pi\iota\tau\alpha\gamma\eta$ could be read at the end.
94. $\kappa\omega\nu\epsilon\iota$; or $\kappa\omega\nu\epsilon\varsigma$; probably the end of a word begun in l. 93. $\mu\acute{\eta}\kappa\omega\nu\epsilon\varsigma$ is unlikely, as the singular was generally used.
98. $\epsilon\pi\alpha\nu\eta\lambda\acute{\iota}\sigma\kappa\omega$. For this word, cf. *P. Cornell*, I, 87 f., $\tau\omicron\iota\varsigma \alpha\upsilon\tau\omicron\iota\varsigma \acute{\alpha}\phi\alpha\iota\rho\upsilon\mu\acute{\epsilon}\nu\omicron\upsilon \tau\omicron\upsilon \epsilon\pi\alpha\nu\eta\lambda\omega\theta\acute{\epsilon}\nu\tau\omicron\varsigma \kappa\tau\lambda$. The context there shows that the $\epsilon\pi$ - denotes an extra payment over and above the normal issue of $6\frac{1}{2}$ cotylae. It is not clear whether in the present case it means an extra expense (for an unspecified purpose) additional to the preceding entries, or an excess in the total expenditure above some previous total. A debit balance, i.e. an excess of expenditure over receipts or cash in hand, is elsewhere expressed by $\acute{\upsilon}\pi\epsilon\rho\text{-}\alpha\nu\eta\lambda\acute{\iota}\sigma\kappa\omega$ (l. 65). The derivative $\epsilon\pi\alpha\nu\eta\lambda\omega\mu\alpha$ occurs in *P. Petrie*, II, 33 (a), B, 1, 3.
100. $\Sigma\tau\rho\acute{\alpha}\tau\omega[\nu\iota$. If the genitive occurred (denoting a receipt) $\tau\omicron\upsilon$ would be required after it ("I receive from Strato of Memphis"), which does not well suit the space. Probably the dative is to be preferred, the meaning being "I have (a credit of) 1 dr. with Strato at Memphis."
104. ς . Probable from the edge of the break in the wax, and necessary for the total in l. 112.
105. $\phi\upsilon\lambda\alpha\kappa\eta\iota$ was read by Edgar. Before it $\acute{\epsilon}\mu \pi\acute{\alpha}\varsigma[\eta]\iota$ could be read, but seems unlikely.
109. Without the context it is impossible to say how the abbreviation is to be expanded, or whether $\epsilon\pi\iota$ is to be separated from $\tau\rho\alpha$ (). $\tau\omicron\upsilon\varsigma$ is probably, but not certainly, the article.
111. An inserted line.
112. Clearly the total of previous items. Since these expenses were defrayed out of the 1 dr. entered in l. 101 (see l. 102), there was a debit balance ($\acute{\upsilon}\pi\epsilon\rho\alpha\nu\eta\lambda\acute{\iota}\sigma\kappa\omega$, l. 113) of $\varsigma\chi$, which must have occurred in l. 113 or l. 114. The figures in l. 114 suggest that a further disbursement of $2\frac{1}{2}$ ob. was added to this expenditure, but that the writer has inadvertently entered the total as $\vdash \alpha\chi$ instead of $\vdash \beta\chi$.
114. The \omicron of $\tau\omicron\iota\varsigma$ is more like ω , but \omicron is not well made in this hand.
117. I.e. 4 ob. a day for three days = 12 ob. = 2 dr. Read $\acute{\eta}\mu\acute{\epsilon}$.
118. The sum of the totals in ll. 114 and 117. A cross (\times) is written in the margin here.
119. = is followed by a long, slightly curved, vertical stroke, perhaps merely intended to separate this line giving the credit from the payment which follows.
121. After — ς two horizontal strokes, like the 2-obol sign, perhaps for punctuation (cf. l. 119). Line 122 end $\tau\acute{\omega}\iota$.
72. For the position of this tablet, see Introduction.
127. The remainder, 1 dr. $1\frac{1}{2}$ ob., seems clearly what is left after deducting the preceding total, 21 dr. $0\frac{1}{2}$ ob., from the credit recorded in l. 119. The total should therefore be the result of adding the items in ll. 123–126 to the total

70 B

ἔχεις δ = ζε
 ναῦλον ιβ

β = ζε
 καὶ ἐν τῇ φυλακῇ
 ὄφον - ζε +
 [εμ Μ]έμφι ἐπεδείπναι
 [λα]χανα ὄξος ζ
 ζ / = ζ 85
 ... ἐπὶ Δέλτα
 ... λεν ... ε ὄξος ζ
 = φανη 15-
 [α]ρ]τοι - παιδαρίοις =
 [ζ]ῦτος ζ / α ζ ζ 90
 / ιβ ∪ = ζε

BLACK WAX. HAND D.
70A BLANK.

71 A

ταγη
 κωλει τῶν παιδαρίων
 95 πράσα καὶ ἔτνος [
 εἰς βαλανεῖον [
 τοῖς παῖσι ζ
 ἔπανηλίσκω =
 / α
 100 ἔχω παρὰ Στράτωνι
 ἐμ Μέμφι ια
 τούτου
 λαχανα ὄξος ζ
 0 ἔλαιον - ζ
 105 ἐμ [...] φυλακῇ
 0 ὄφον - ζ

BLACK WAX. HAND D?

71 B

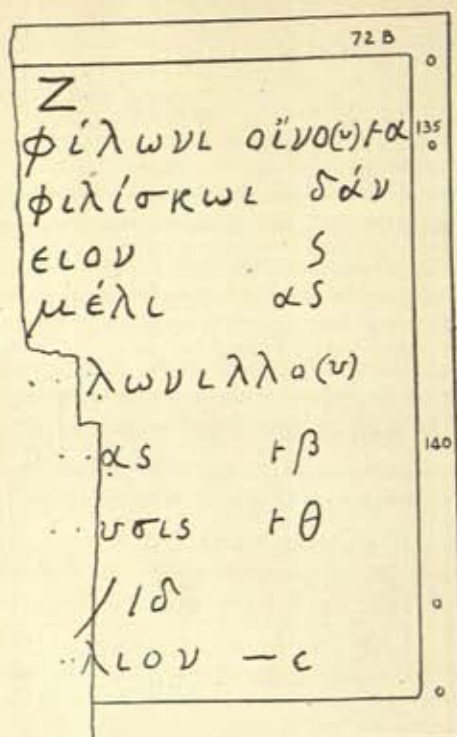
... βλεων X
 ... νωι
 ... τους ἔπιτρα) ζ
 ... αχη ζ -
 ... εἰχος ζ
 ια ζ ζ
 ὑπερανηλίσκω
 τοῖς = ζ ια ζ
 ἄρτους τοῖς παιδαρίοις καὶ
 τοῖς παῖσιν ἀπὸ ιβ
 εἰς εδ τῆς ἡμέρας - / ιβ
 / ι γ γ X
 ἐμ Πτολεμαίδε ἔχω ιηβ =
 Στράτωνι καὶ τοῖς με
 120 τὸ χ(οι) αὐτοῦ ιη - ζ

BLACK WAX. HAND D?

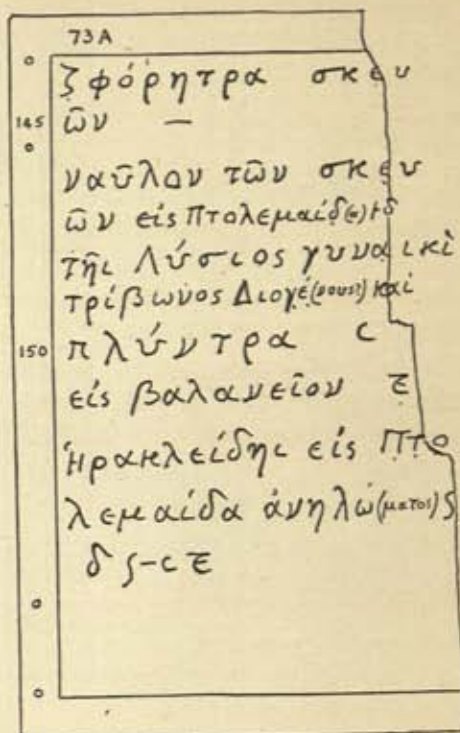
72 A

κριθὴ τοῖς ὑποζυγίοις καὶ τ
 0 ὀνηλάτῃ τὰ δέοντα ζ
 ἔλαιον -
 125 ζῦτον τοῖς παιδαρίοις ζ
 ὄφον ζ X
 / κ κς ∪ α - ζ
 ἐ ἐμ Πτολεμαίδε
 ἄθαρα καὶ γάλα τοῖς παι
 130 δαρίοις ζ
 ἄρτους -
 0 ζῦτος ἐν τῇ ὁδῷ ζ
 0 / = ∪ / = ζ

BLACK WAX. HAND D?



BLACK WAX. HAND E.

RED WAX. HAND F.
BACK BLANK.

- in l. 121, but the correct result is 21 dr. 0½ ob. Apparently the writer misread ε in l. 125 as c. There is a large cross (X) after this line.
132. ζ. Only the outline of the left side of this character remains on the edge of the tablet, but the total in l. 133 establishes the reading.
133. ς / = c. The remainder, after deducting 2 ob. from the 1 dr. 1½ ob. in l. 127.
134. ζ. Evidently the day of the month, not drachmae; the total in l. 142 does not include it.
141.]υσις. One thinks of Πεκ]ύσις, but Πεκ]ύσει would be expected by analogy.
142. On the right side of the tablet there is a mark like ς, perhaps accidental.
143. — c. The c has a short horizontal stroke about the middle, perhaps accidental, but the whole may be meant for ε, though the — is quite separate.
144. φόρητρα.
147. ι δ. Only a small portion of the δ remains, but the letter is guaranteed by the total in l. 154, which also shows that nothing is lost here.

H. I. BELL.

A PTOLEMAIC HOLIDAY.

THE tablets now brought into historical use by Mr. Bell's careful editing yield an unusual view of Ptolemaic society. They refer to a boat-trip during ten days from Ptolemais (now supposed to be Lahun) to the head of the Delta and back, just as the Cairenes now go for a picnic to the Barrage. There were at least thirteen people in the party: Horion (l. 5) and Herakleides (l. 6), another pair Philon and Straton (l. 8), the "lads," apparently separate from either pair (l. 50), for whom tops were bought (l. 94), and, as well as the lads, there were also "children" (l. 116). Besides these nine, there are named expenses for Artemidoros (ll. 30 and 32), Aunas (l. 14), Harmais (l. 60), and Heliodoros (ll. 59, 68, and 71), and, by the repetitions of the names and the baths required, these are doubtless of the party, making thirteen. Some responsible person doled out the tetradrachmae one by one as required, making up the account each time (ll. 62-66, 91, and 114); he may have been one of the persons named above. There are six different handwritings, probably of different members to whom the cashier dictated the expenses.

The payments are not for any business purposes, either of trade or labour. They are too trifling for the whole food of a dozen people—ravenous boys—being merely for some fresh bread and vegetables. There were many purchases before starting, evidently laying in a stock of provisions for the party (ll. 10-29).

There were two definite parties combined, as two sets of purchases were accounted separately before starting (ll. 19-29), and at the end, after rendering up the balance to Straton, there were further costs for donkeys and the lads getting home (ll. 122-126).

Having now mapped out the conditions we can begin to restore the tale of the affair. The first panel, inside of the outer cover, is lost, but it held the expenses of the beginning preliminaries. Three of the passengers, A, B, C, wrote the accounts dictated to them, till the cashier took it over at Memphis. The family of Horion lived a little way out of Ptolemais (ll. 122-126), and was asked by the Straton family, who lived at Ptolemais (ll. 119-121) to join in a trip to the fork of the Delta, sending their paidogogos to act as paymaster, while Straton would advance the cost, to be shared up at the end. On the 4th of the month this was put in hand (l. 4), and on the 5th, Horion and Herakleides (l. 5) joined the boat, and a lot of provisions were laid in to the separate order of the two families (ll. 19-29), totalling a tetradrachma and three coppers over. The paidogogos had begun with 14 tetradrachmae in hand, and paid up 5 tetradrachmae unspent at the end (l. 121), having spent on the whole trip about the equivalent of four or five pounds in modern Egypt.

Having laid in provisions, they started on the 6th, down the canal, which ran below the pyramids on the west bank. Straton and Philon—rich boys—went ashore somewhere to a restaurant of Nikion. By the 8th they reached Memphis, and the paidogogos took over the writing of the account, the elder boys being tired of it. He paid about 7s. 6d. to the boatman, who would not go farther, as Upper Nile men now always refuse to go below Cairo, for that is the Delta business. The party went to the restaurant of Kallikrates and had dinner.

using mostly their own store of food. Another boat was hired to go to the fork of the Delta, about twenty-four miles, and back, for 5s. At that festive place some tops¹ were bought for the boys—their fairing (l. 94). Returned to Memphis, Straton drew a drachma (say half a crown) to spend as he liked. The customs guards on the frontier of Middle Egypt received a little tip of 9d. or 1s. on going down (l. 81) and back again (l. 106), tips called *opson* or “a savoury,” as we speak of a “sop” to anyone. The guard of the nome collected the customs on the southern portion of the Heptanomide (*Ox. Pap.*, XII, 113), and so, doubtless, at the northern frontier near Memphis.

By the 14th the party were back again at Ptolemais, and here the paidogogos settled up the balance in hand with Straton, holding over two drachmae for winding-up expenses. After that he spent for barley and donkey-boys to take the baggage of the Horion family home, and some beer for the lads. As he kept a balance equal to about 3s. over till a fresh account next month, it is clear that he was not a regular steward but rather one of the household, trusted for occasional business.

We here see the outline of a merry picnic party of a dozen youths and boys of two friendly families, going down to a holiday resort in an open boat, sleeping on board, and looked after by their paidogogos who held the cash, who dictated the accounts on the out voyage to one or other of the boys, but who had to write it all by his own hand on the return voyage because they had become too careless. They started well with detailed notes as to who each payment was for, so as to divide it up exactly afterwards; but on the return they gloriously left that to chance, and had to estimate the total at so much a day (ll. 115–117). The whole affair seems just what might be expected at present for a holiday party between those places in the late summer, when the heat was over and the canals still full.

Three of these tablets are published in photograph, half-size, in *Objects of Daily Life*, Pl. LIX; but as the order of them is now known they have been renumbered—so 67 in that plate is now 71B, 68 is 68A, and 70 is 73A. Mr. Bell has kindly consented to my transcribing his text in the form and size of the original tablets. This renders the tablets as the writers would have written them if the modern text-hand had been then in use. The effect of the damages is thus better understood, and there is in this arrangement more of the spirit of the original than appears in formal print. Every account-keeper will relish the triumphant crosses with which each balancing is marked, when a fresh tetradrachma was taken out of store. The dots under letters show that they are uncertain. The ellipses [] are for conjectures. The loops () indicate the extension of abbreviations, < > mark words omitted by the writer. The outline is that of actual wood, of which only just the frame edge has been broken off by a pick-stroke (see ll. 4 and 8, and, at the other end, ll. 144, 146, and 152, where the rest of the word had to be passed to another line). The inner wavy line marks the limit of the wax coating where broken away, and so bounds the text from the reconstruction. Some tablets have suffered much from crystallised salt, but others are as fresh as when written.

F. PETRIE.

¹ Here Mr. Bell protests that the plural should be *oi*, and not *ei*, but no other sense is likely in the circumstances.

OBSIDIAN.

OBSIDIAN, or volcanic glass, is a form of lava, which has been completely fused, and it is found in most volcanic districts, though it is not so usual as the more earthy and pasty lavas. It varies in colour from a completely opaque black through every grade of translucency to a perfectly clear and colourless transparency, though this last is very rare. Just as flint or chert can only be derived from particular strata, and must have been carried by trade if found at any distance from these centres, so the presence of obsidian objects in a non-volcanic country is proof of trade with some centre of volcanic activity. Unhappily the scientific identification of any given piece of obsidian with specimens from any one deposit is beset with difficulties, so that it is at present impossible to say categorically that the given piece did, or did not, come from a certain locality. Yet, however, within limits, it is possible to attain a considerable degree of probability as to the place of origin, and further to eliminate other places as hitherto having produced nothing comparable to the material under discussion. This is useful as indicating the trade routes.

With these remarks in view a study of the obsidian question, as presented by Egyptian archaeology, will not be unprofitable.

SOURCES OF OBSIDIAN.

In the *Labyrinth Gerzeh and Mazghuneh*, p. 24, I published an account of a piece of obsidian found in the predynastic cemetery of Gerzah and dating to the second predynastic period. It was not possible to date it more exactly than to the period between s.d. 43-70. The Mineralogical Department of the South Kensington Museum kindly inspected the piece, but did not make a petrological study of the physical properties. They stated that, of their specimens, the Gerzah piece was more like the Samian to look at than any of the others. At the same time the opinion was expressed that such resemblance as there was between the two was not at all close, and with that I had to remain content for the time being.

Belief in the importance of the Melian obsidian trade has so engrossed archaeologists' attention as to blind them generally to other possibilities, yet time and again isolated individuals have realized that there were difficulties in the way of thinking that all the obsidian which is found on Near Eastern sites came from Melos, but the subject has never received the attention it deserves.

Thus wider views have been expressed. Bosanquet, in his detailed study of the obsidian trade (*Phylakopi*, p. 229), says: "Lipari, Sardinia, Pantelleria, Auvergne, are sources for implements found in the western Mediterranean; the deposits near Tokay in Hungary for any found north of the Balkans; the Caucasus and Russian Armenia for any found in the Black Sea and in eastern Asia Minor," and he thinks of Abyssinia as a possible source for that found in Egypt.

Peet, Wace, and Thompson realized that there were curious phenomena to be explained away if the obsidian used in Thessaly had of necessity to be derived from Melos (*Classical Review*, 1908, p. 236 and n. 2). Once more they name Tokay, the Caucasus, and Russian Armenia as possible sources.

Sudhoff, a geologist, brings plenty of evidence to show that obsidian exists in great quantities at the south-western end of the island of Cos, *i.e.* on Mount Zeni on the Kephalos Peninsula, and the little island of Hyáli (Glass Island) lying in the bay. He thinks it quite possible that this place, therefore, may have played an important rôle in the obsidian trade of the eastern Aegean and even in that of Egypt (*Die Naturwissenschaften*, Berlin, 1927, pp. 335 f.).

After examining the pieces of obsidian found at Râmes near Istánoz in south-western Pisidia, Myres pronounced them definitely to be not of Melian origin (Ormerod, *Annual Brit. School at Athens*, XVI, p. 102, n. 6).

Speaking of the obsidian vase from Byblos in Syria, Clermont-Ganneau says that obsidian "n'est nullement de provenance exclusivement méditerranéenne, et qu'on aurait tort d'en faire l'apanage caractéristique de la civilisation égéenne," and then goes on to speak of the possibility of an Ethiopian origin for it (*Syria*, III, pp. 296-7).

De Morgan, who was a geologist and had made archaeological researches in Armenia, takes it for granted that the obsidian he found elsewhere, *i.e.* in the Pusht-i-Kuh mountains and at Susa, was of Armenian origin, though he also remarks in one place that it might have come from Arabia (*Délég. en Perse*, I, p. 46). In the same way Pumpelly, who was also a geologist engaged in archaeological research, takes it for granted that his single piece at Anau in Turkestan came there from the Caucasus (*Explorations in Turkestan*, I, p. 181). Others record their obsidian implements without enquiring as to the possible source of origin.

Now, when obsidian is found to be in such common use as it is in Armenia and Mesopotamia it is hardly possible to refer so vast a trade to an island so small and so remote as Melos until all possibilities of a nearer provenance have been exhausted. As a matter of fact there is a great obsidian field close at hand in Armenia itself upon which the Near East may have drawn without the necessity of going all the way to the farther side of the Aegean. Various travellers have reported the presence of obsidian from a number of places here, for instance, at:—

Nimrud Dagh.—Great black masses of obsidian, "pure and black as jet," are found in the crater (Lynch, *Armenia*, II, p. 302). There are also beds of a "dark green obsidian which was glittering in the sun" (*op. cit.*, p. 300). Obsidian blocks, "coal-black in hue," are lying about in the fields on the slopes (*op. cit.*, pp. 299 and 311). At Göl Bashi, at the eastern foot of this mountain, the lava is "strewn with blocks and small fragments of jet-black obsidian" (*op. cit.*, p. 319).

Sipán.—Impure obsidian is found in the crater (Lynch, *op. cit.*, p. 339, n. 1).

Kara-Kala, a peak of the Bingöl Dagh.—Traces of obsidian are visible in the lava on the eastern side (Lynch, *op. cit.*, p. 366).

Alagöz.—(de Morgan, *Délég. en Perse*, I, pp. 45 and 46.)

Bardès.—"Numerous masses of black and brown obsidian . . . occurred in such quantities and in blocks of such a size that the road in some places was literally paved with it." "A lofty hill, which appeared to be a mass of obsidian so numerous were the fragments of that mineral which lay around its base" (Hamilton, *Researches in Asia Minor, etc.*, I, p. 191).

Erzerum and Van.—Deposits of obsidian have been reported from these places to de Morgan (*Délég. en Perse*, I, pp. 45 and 46).

In fact, Armenia is largely volcanic, and has been described as composed of "great plains divided by irregular mountain masses of eruptive volcanic origin" (Lynch, *Armenia*, II, p. 145). Similarly of Cappadocia, Chantre says: "Le pays est essentiellement volcanique" (*Miss. en Cappadoce*, p. 211). Of course, wherever volcanoes are, the volcanic product, obsidian, is likely to be found, and no doubt such names as I have been able to quote by no means exhaust all the localities whence a supply might have been obtained. Further, it is already known that the obsidians of Armenia differ considerably in their characteristics, for while Lynch reports (*op. cit.*, p. 300), that that from Nimrud is either coal-black or dark green in colour, and that from Sipan is "a dull, impure obsidian with ill-developed spherulites" (*op. cit.*, p. 339, n. 1), and so not unlike some of that from Nimrud, de Morgan (*Syria*, IV, p. 26), says of that from Alagöz, that it is always transparent, sometimes completely colourless like glass and often veined with very characteristic opaque bands of red. The smaller flake from Shamiram-alti, near Van, and now numbered 104882 in the British Museum (King, *P.S.B.A.*, XXXIV, Pl. XXIII, 2), has been struck from an obsidian totally different again from any of these. It is quite opaque and muddy-looking, being composed of streaks of opaque black and grey. The fracture is totally different also from that usually associated with obsidian, for instead of showing a smooth glassy surface with a series of waves succeeding each other down the length of the flake, this one has a surface that is covered all over with minute pits, giving a rough appearance under the magnifying glass, which may even be seen in the plate. It corresponds pretty well to de Morgan's description of obsidian from the Little Caucasus (*Délég. en Perse*, I, p. 45), or Lynch's of that from Sipan.

That obsidian not only existed, but was also worked and used in Armenia and eastern Asia Minor, has already been made abundantly clear by the few expeditions that have concerned themselves with such things. Thus Chantre reports:—

Numerous scraps and flakes of obsidian from near Elenovka (*Recherches Anthropologiques dans le Caucase*, I, p. 48, Pl. II, figs. 1, 2, 3, 4).

Several arrow-heads of obsidian from Samthavro and Mtskheth (*op. cit.*, p. 48, Pl. I, figs. 1, 6, 7).

Two superb obsidian arrow-heads from Redkine-Lager (*op. cit.*, p. 48 and fig. 2; also Pl. I, figs. 3, 5).

De Morgan discovered—

Two obsidian nuclei in a tomb near Akthala (*Miss. Scientifique au Caucase*, I, p. 37).

Obsidian arrow-heads at Mouci-yeri (*op. cit.*, pp. 99 and 101).

Obsidian arrow-heads at Redkine-Lager (*op. cit.*, p. 100).

Many pottery vessels ornamented with an obsidian flake at the bottom at Cheithan-thagh, Mouci-yeri and Redkine-Lager (*op. cit.*, p. 150).

Finally he remarks: "Dans la plupart des sépultures, nous avons rencontré des éclats d'obsidienne . . ." (*op. cit.*, p. 136).

At Shamiram-alti, just outside Van, there have been found "many hundreds of obsidian knives and weapons, some obsidian arrow-heads, several stone axe-heads . . ." (King, *P.S.B.A.*, XXXIV, p. 200, and Pls. XXIII, 1 and 2; XXIV, 9). The description of No. 1 tallies with de Morgan's account of the obsidian of Alagöz in being absolutely transparent in parts, but the opaque streaks visible in the plate are black instead of red.

Chantre found near Fraktin "innombrables éclats d'obsidienne taillés en forme de couteaux, de grattoirs, de scies et de flèches, accompagnés de nucléus et de rejets de fabrication . . ." (*Miss. en Cappadoce*, figs. 93-96, and p. 129).

From another small station actually at Fraktin itself he collected other obsidian flakes (*op. cit.*, pp. 131 and 132).

His summing-up is very decisive, for he says: "En effet, le silex de nos stations occidentales est remplacé ici (Cappadoce), comme en Grèce, au Caucase et à l'Ararat par l'obsidienne" (*op. cit.*, p. 130). "En somme je n'ai trouvé en Cappadoce aucune trace de silex taillé des époques primitives de l'âge de la pierre comme j'en ai découvert autrefois dans la Syrie du nord," and still more to the same effect (*op. cit.*, p. 132).

THE LIMITS OF OBSIDIAN AND FLINT.

Indeed, the reader is struck by the absence of flint from the records of discoveries in eastern Asia Minor. In fact the only records of the use of flint within the area are those of several flakes and an arrow-head from Kutais and Sadjî (Chantre, *Recherches Anthropologiques dans le Caucase*, I, Pl. I, figs. 2 and 4, and p. 48). With these exceptions, whenever flint is mentioned it is outside the area, so that we get all round about it a fringe of flint finds.

Thus, on the northern slopes of the Caucasus there were found:—

Several flint arrow-heads at Petrassowska, not far from Zelentchouk (Chantre, *op. cit.*, p. 48)

A flake of white flint from the *aoul* of Galiat, district of Terek (Chantre, *op. cit.*, p. 48).

At Maikop, in the foothills of the northern slopes of the Caucasus, the arrow-heads that were found were of flint (Rostovzev, *Rev. Arch.*, XII, fig. 2, and p. 5).

On the western side flint is immediately found in competition with obsidian, and this is the more remarkable as the country is surrounded by volcanic lands whence obsidian might be obtained, and, as the finds show, actually was.

At Boz Euyuk (Gordion) obsidian does not appear, but only flint, though there is only a single specimen of that (Körte, *Mitth. K. D. Arch. Inst. Athenische Abtheilung*, 1899, p. 17, No. 5).

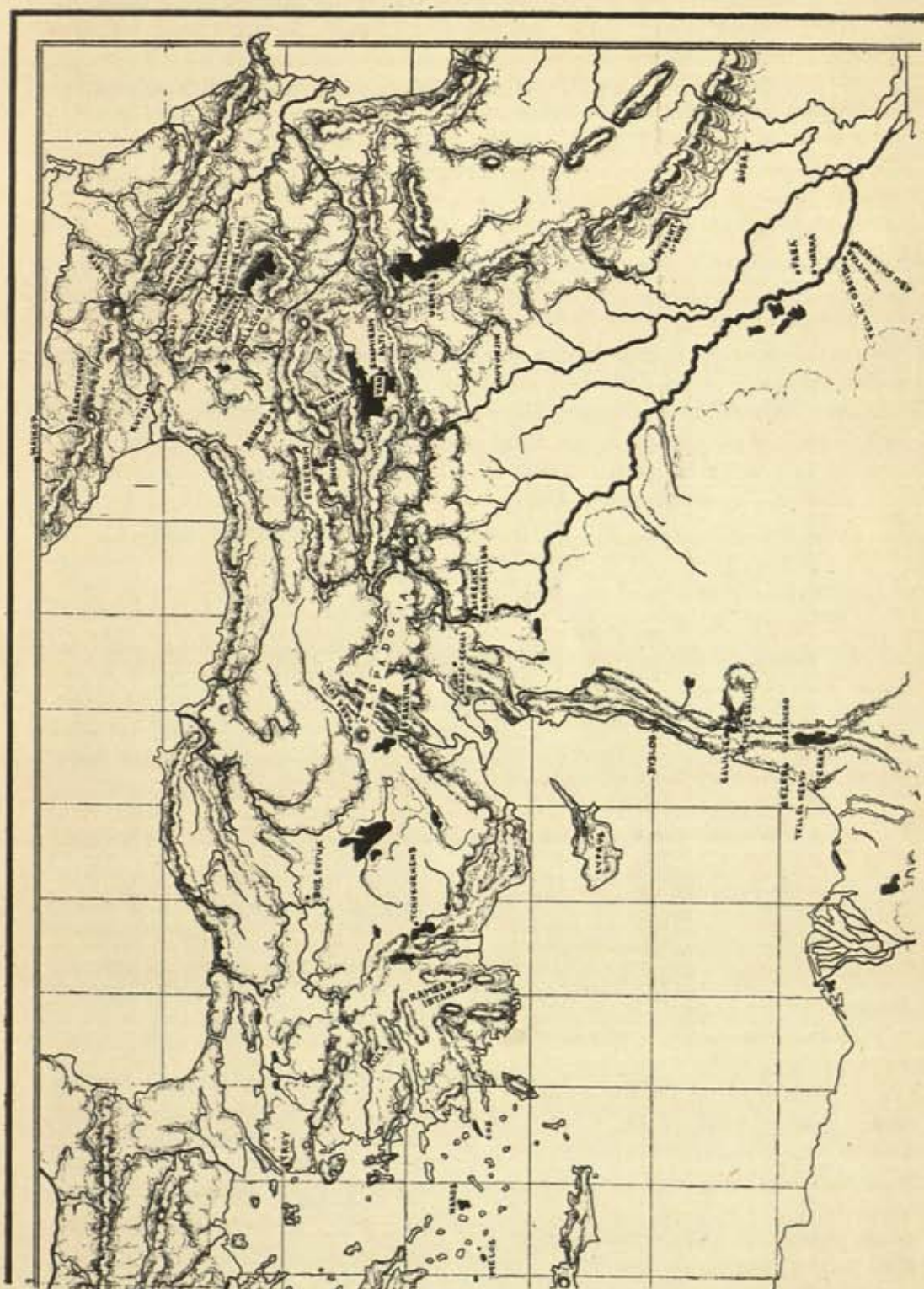
At Troy, even though on the Aegean shore, it is clear that among the stone implements flint is the usual material, and that obsidian takes only a minor part (Schmidt, *Trojanischer Altertümer*, pp. 300 and 301).

A small flint-knife was picked up near Istânoz in south-west Pisidia (Ormerod, *Annual Brit. School at Athens*, XVI, p. 90).

In this direction obsidian is reported as having been found at Râmes, near Istânoz, where there were a few pieces (Ormerod, *op. cit.*, p. 92).

At Tchukurkend large quantities of obsidian were found (Ormerod, *Annual Brit. School at Athens*, XIX, p. 48, and *Classical Review*, XXVI, p. 77), and they were of two of the varieties produced by Armenia, the transparent, such as comes from the more distant Alagöz, being in the minority. The opaque was in the majority, and might perhaps have come from either Sipan and Nimrud Dagh, which produce an obsidian of this type, or from the place that produced the smaller flake used at Shamiram-alti.

However, the question of the place of origin of the obsidian used in western Asia Minor is far from simple, and is complicated by a number of possibilities, for besides Armenia there is always Melos, from which indeed, at the time of



MAP OF SITES OF OBSIDIAN.

discovery, the Tchukurkend specimens were supposed to have come. Then there is the island of Cos, which will now have to be considered, and yet again, there is the important volcanic region of Lydia, which is called the Burnt Land (Hamilton, *Researches in Asia Minor, etc.*, I, pp. 136-40 and 143; II, pp. 131-8). This is situated in the upper valley of the Hermus round about the modern Kula, and, being as it is, midway between Râmes, Tchukurkend and Troy, may well have supplied the obsidian to all of them.

On the south side of the Taurus there are :—

Sakje Geuzi, where flint implements were found, and with them obsidian ones also (Garstang, *L.A.A.A.*, I, Pl. XLIV, fig. 2).

At Birejik on the Euphrates it was not obsidian that was found but "utensiles en roche dure taillés à grands éclats," and other finds of flint implements are mentioned from North Syria (Chantre, *Miss. en Cappadoce*, pp. 130 and 132).

At Carchemish, a little further down the Euphrates, both flint and obsidian implements were found (Woolley, *L.A.A.A.*, VI, p. 88).

At Kuyunjik, on the Tigris, King obtained obsidian implements from the lowest levels of the mound (King, *Hist. of Sumer and Akkad*, p. 343, n. 3).

From Cyprus it is significant that the only stone knife recorded by Myres is a flint one (*Cat. Cyprus Museum*, p. 13).

From the east side of the Armenian centre there come two splendid flint knives from the eastern shore of the Caspian Sea (Chantre, *Recherches Anthropologiques dans le Caucase*, I, p. 49).

Thus, then, it is clearly to be seen that there was a large volcanic obsidian-producing area in Armenia. Taking this as a centre, one finds that here obsidian was regularly used instead of flint, and that on getting down off this central plateau one immediately begins to find flint being used alongside of the obsidian. Indeed, the further one goes from this centre the more common does the flint and chert become, while the obsidian becomes correspondingly scarcer until finally at Anau, in Turkestan, in Palestine, and in Egypt it becomes a rarity.

At Anau, it is said, "Mention has been frequently made of flint implements and flint flakes. Obsidian is a great rarity. It is represented in a single well-worked arrow-point in Culture III" (Pumpelly, *Explorations in Turkestan*, I, p. 181; also p. 167 and pl. 44, fig. 5).

At Susa, de Morgan says: "Les instruments d'obsidienne, bien qu'abondants, sont cependant moins fréquents que ceux faits de silex." (*Délég. en Perse*, XIII, p. 15; cf. also p. 14 and figs. 46, 47, 48, 49, 50, and 76, and I, figs. 403, 413, and 415.)

About 150 kilos away, at Tepe Mohammed Djaffar, near Moussian, in the Kebir Kuh, rocks of the most diverse nature were used for striking flakes. Among them there was obsidian, though it is not native to this region (de Morgan, *Délég. en Perse*, VIII, p. 82).

In the Pusht-i-Kuh Mountains, forming the foothills of the Iranian Plateau on the Mesopotamian side, de Morgan again says: "... et enfin des obsidiennes beaucoup plus rares (que les silex)" (*Miss. Scient. en Perse*, IV, p. 5).

In Palestine flint has become the normal thing and is common, while obsidian is exceedingly rare. None at all is recorded from the palaeolithic and neolithic settlements in Galilee, while flint is everywhere (Turville Petre, *Researches in Prehistoric Galilee*, passim).

At Jericho, Tell el Mutesellim, and Tell el Hesy the state of affairs is exactly the same (Schumacher, *Tell el Mutesellim*, Pl. XIVA *et passim*; Sellin and Watzinger, *Jericho*, pp. 112 ff.; Petrie, *Tell el Hesy*, pp. 49 and 50).

At Gerar, while there was plenty of flint (on exhibition at University College this summer) there was no obsidian.

At Gezer, while flint was the normal thing, a minimum quantity of obsidian was found. Thus, "Besides flint, a very few specimens of tools in obsidian were found—not more than one or two in each stratum, if indeed there were so many" (Macalister, *Gezer*, II, p. 127). This detailed statement is a fitting climax to the short view of Palestinian archaeology given above, and emphasizes the extreme rarity of obsidian. In fact, as regards obsidian, Gezer, in southern Palestine, is in just the same condition as Anau, in Turkestan. Seeing how rare it is in Palestine, it is only natural that in Egypt, which is still further from the Armenian centre of export, obsidian, as a tool, should be as rare as it is, and Macalister's description of the state of affairs at Gezer would apply equally well to Egypt where, as is well known, chert, a form of flint, was the regular substance in use for cutting implements, and for this purpose obsidian was of the rarest. As an article of luxury in Egypt, however, its history is different, the result, of course, of Egypt's peculiar pleasure in working hard stones.

It will probably have already been noticed that there is a gap in the foregoing list of zones round the Armenian centre. It is Mesopotamia, for here flint is either rare or does not occur at all, while the commonness of obsidian is very marked. In fact, the Land of the Two Rivers may be said to be practically an extension of Armenia as regards the use of obsidian, and is, indeed, in the strongest contrast to the countries on either side of it.

At Kuyunjik, in Assyria, obsidian was found, as has already been mentioned, and it is probably no mere coincidence that flint is not named.

In southern Babylonia, at Fāra, "Zahlreiche Messer und Sägen aus Silex und Obsidian," were found (*Mitth. D. Or. Gesells.*, No. 15, Nov., 1902, p. 9).

At Abu Shahrein, "obsidian, flint and crystal flakes, cores, and pegs," were found (Hall, *Journ. Egyptian Archaeology*, VIII, p. 243).

At Tell el 'Obeid, similarly, obsidian, flint, and crystal flakes were collected (Hall, *op. cit.*, p. 244, Pl. XXXIV).

From Muqayyar (Ur) and Warka (Erech), the show-cases of the British Museum exhibit a number of similar specimens.

The reason of this southern extension of the use of obsidian is not far to seek. In the alluvial flats of Babylonia there is neither flint nor other stone suitable for flaking, hence the early inhabitants were obliged to import. That they turned towards the head-waters of their rivers to Armenia is evident and, indeed, natural, for rivers form the easiest trade routes. That Upper Mesopotamia should have used the obsidian is only natural, as it is on the periphery of those lands which were the home of obsidian, and where it was used as the normal material.

The fact that obsidian implements were more commonly used in the Pusht-i-Kuh Mountains and Susa than their distance from Armenia would warrant on comparison with Palestine and Egypt, is due either to the proximity of this active obsidian trade in the neighbouring countries of Mesopotamia, or else to the fact that they were in direct connexion with Armenia by the

numerous parallel valleys which lead through the mountain ridges right down to them.

By the kindness of the staff I was enabled to handle the obsidian objects from Abu Shahrein and Warka, now on view at the British Museum. On examination they prove to be of two of the kinds known to exist in Armenia: the opaque coal-black, of which there is a crude lump and of which some fragments of vases are made, besides flakes; the translucent, varying from a cylinder of almost glassy-grey transparency to flakes which are quite opaque in the middle, only becoming translucent where the material thins towards the edges. I was not able to observe the red veining spoken of by de Morgan as characteristic of the obsidian of Alagöz, any more than he was able to do in the specimens he found at Susa (*Délég. en Perse*, I, p. 45). That the obsidian used in Babylonia did actually come from Armenia is thus as nearly certain as can be, without a proper scientific investigation of the physical properties of the two. It is to be observed that the proportion of opaque obsidian to transparent in Mesopotamia is the inverse of that in Egypt, where the opaque is the most common.

THE NORTHERN CONNECTIONS OF EGYPT AND MESOPOTAMIA.

History, both cultural and political, makes it very natural that Mesopotamia certainly, and Egypt not improbably, should receive their obsidian from Armenia. Sumerian and Susian influences were felt far afield to the north and the north-east. From the neighbourhood of Urmia comes a cup decorated in a style reminiscent of early Susa (Virchow, *Zeits. für Ethnologie*, XXXII, p. 609, and Pl. IX, fig. 5), or a better drawing (Frankfort, *Studies*, II, fig. 21B, p. 178); further, at Astrabad at the south-eastern corner of the Caspian Sea, was found a treasure showing in its art strong affinities with that of Babylonia (Rostovtzeff, *Journ. Egyptian Archaeology*, VI, pp. 4 ff.). About 2800 B.C. Sargon of Agade certainly reached the Taurus and the Cilician Gates, and may have invaded Cappadocia (*Cambridge Anc. Hist.*, I, pp. 405-6), and between 2400 and 2100 B.C. colonies of Assyrians or Amorites were living at the important trading centres of Ganish and Burush (Kara Euyuk) (*Cambridge Anc. Hist.*, I, pp. 453 ff.). Similarly, the art exhibited on objects found in a copper-age burial at Maikop in the foothills of the northern slopes of the Caucasus goes back to the art of early Mesopotamia and the imported one of early protodynastic and late predynastic Egypt (Rostovzev, *Rev. Arch.*, XII, pp. 1 ff.).

Egypt was also in contact with this part of the world from very early days. Osiris, or his prototype, was probably established in Egypt before the 1st dynasty, and mythological references show that this most important god was not a native of the Nile Valley, but an importation from Syria, being specially connected with Byblos. Classical tradition is also very strong that he introduced, not only into Egypt, but into other parts of the world also, the elements of civilization; especial emphasis being laid on the cultivation of wheat, barley, and the vine and the harvesting and preparation of their fruits (*Diodorus Siculus*, Bk. I, ch. 14-18; Plutarch, *De Iside et Osiride*, ch. 13). It is important to note that, from evidence at present before him, Newberry tells me that he thinks it probable that Syria was the home of the art of cultivating the vine, though De Candolle (*Origin of Cultivated Plants*, pp. 191 ff.) would refer it to Armenia itself. Equally satisfactory is it that wheat and barley are almost certainly natives of Syria, where they are

quite commonly found growing wild together (Stapf, *Suppl. 3, Journ. of the Board of Agriculture* (London), XVII, pp. 75 and 81); in fact, just as Diodorus describes them when he says: "... wheat and barley, which before grew here and there in the fields amongst other common herbs and grass." A second variety of wild wheat has its original home in Syria or Mesopotamia, and yet a third in Asia Minor itself (Stapf, *op. cit.*, p. 81).

Material relics are not wanting in Egypt of this predynastic intercourse with the north, for at this time Egypt was importing a variety of commodities from this direction. In the first place there is coniferous wood, which must have come at least from the Lebanon, and, therefore, probably *via* Byblos. Remains of it have been found by Brunton at Hamamiyah, where it dates to an early period in the predynastic age. Egypt also imported a little obsidian, as will be seen from the lists attached, and lapis lazuli as well. The latter must have come to her *via* North Syria, by the road running round under the Taurus, whether it was originally mined near Koulpa in western Persia between Yezd and Ispahan (de Morgan, *Miss. Scient. en Perse*, III, p. 118), or in the far more distant Hindu-Kush Mountains of Badakshan in north-eastern Afghanistan (Wood, *Journey to the Source of the River Oxus*, 1872, pp. 170 ff.). Besides these she received emery, which has generally been thought of like obsidian, as a product of the Aegean Isles, but which, like the latter, may well have come from the lands of eastern Asia Minor. That it is to be found there, and indeed was, in classical times, is suggested by Theophrastus' statement, that a stone of the same composition as a whetstone, but harder and used for cutting gems, came from Armenia (Teubner, *Theophr. Eresii Opera. Fragm.*, II, cap. VII, 44). The preference that had been given to stone from Naxos for polishing and cutting marble and precious stones, until the Naxian was replaced by Armenian, leaves little doubt but that it was emery that was intended (Pliny, *N.H.*, XXXVI, 10(7)), for there are large deposits of it in this island. (See, further, Wainwright, *Balabish*, p. 38, n. 3.)

Egyptian and Egyptianizing objects have been found at Byblos dating to the middle predynastic and the protodynastic ages. These are the slate palette in the form of a bird for the predynastic (Montet, in *Mons. Piot*, XXV, p. 246, fig. 9, No. 2), and for the protodynastic the gold bead, the figure of the squatting ape, the cylinder-seal, and possibly the ivory bird (Montet, *op. cit.*, figs. 6, 10, 11, and 28, No. 1). Petrie also reports a vase of magnesian marble from Byblos, which is now in the Beirut Museum, though not yet published. He recognized it at once as being of exactly the same material and form as certain vases of Khasekhemui, which he had found at Abydos in Egypt. From the Old and Middle Kingdoms there are naturally plenty of relics. A rare type of copper axe, known in Egypt in the Ist dynasty, is also found in Cyprus (Wainwright, *Balabish*, p. 38 and n. 7). It has long been known that people with anatomical peculiarities like those of the modern populations of Syria, Asia Minor, and the Balkans, had been pushing their way into Egypt from early times, so that they had begun to influence the physical structure of the inhabitants by the protodynastic times, and their features had actually become characteristic of the aristocracy of Egypt by the Old Kingdom. The name "Gizah" is applied to this type of skull, and its peculiarities are now commonly known as "Armenoid" (*cf.* Elliot Smith, *Arch. Survey of Nubia*, II, pp. 24 ff.).

In the latter part of the Old Kingdom, under Wenis and Teti, we hear in the Pyramid Texts of an Island of Fire in the Underworld (Sethe, *Pyramidentexte*,

Sections 265 and 397). It may well be that this originates in some memory of the blazing naphtha wells of the Caucasus, or possibly one of the many volcanoes of Armenia, which was not at that time extinct, or yet again, the "pits of fire" which Strabo reports as causing danger in Cappadocia (Strabo, *Geog.*, XII, ch. II, Sections 7 and 8). Some of these Cappadocian fires seem to have been due to marsh-gas. In fact, a surprising amount of evidence has already been brought to show that there might actually have been a connexion between Armenia and the Lake of Fire which this island becomes in the Book of the Dead (Petrie, *ANCIENT EGYPT*, 1926, pp. 41-5), and, indeed, as intercourse was as common as it has been shown to be, and if Osiris could come from Byblos, as he did, then there is nothing impossible in supposing that reports of phenomena of so striking a nature from further along in the same direction should have found a place in Egyptian religion.

Armenia did, in fact, serve as the Paradise for more than one of the Babylonian myths, which placed the Garden of the Blessed beyond the northern mountains, and, therefore, in that country (Albright, *Am. Journ. Sem. Lang.*, XXXV, pp. 161 and 192; XXXVI, pp. 280 ff.); the burning naphtha wells of the Caucasus and the natural flames on Mount Argæus in Cappadocia, attracted to themselves the worship of the Zoroastrians in ancient days (Frazer, *Adonis, Attis, Osiris*, I, pp. 191-2), and, apparently, one of the volcanoes of eastern Asia Minor, which was still active, provided the prototype of the Babylonian "Humbaba," half-god, half-devil (Smith, *L.A.A.A.*, XI, pp. 107 ff.).

The invaders of Egypt at the end of the Old Kingdom are shown by their button-seals and the cylinder-seal of Khandy, one of their kings of the VIIIth dynasty, to have come from North Syria or from even further afield, for the patterns employed belong to a Syro-Cappadocian body of design (Petrie, *History*, I (10th edn.), pp. 119 ff., and elaborated by Frankfort, *Journ. Egyptian Archaeology*, XII, pp. 89 ff.).

At the time of the XIIth dynasty the Caucasian peoples were pushing southward, for torques of a definitely Caucasian type, and dated to about this period, have been found at Byblos (*Syria*, 1925, pp. 16 ff., Pl. II and fig. 2), and that they finally got into Egypt is proved by the torque of similar date and design which comes from Kahun (Petrie, *Illahun, Kahun and Gurob*, Pl. XIII, 18, and p. 12), and the other found at Abydos (Frankfort, *Studies*, II, p. 149). The southward movement of the peoples, known to us by the Syro-Cappadocian button-seals at the end of the VIth dynasty and their Caucasian torques of the XIIth dynasty, were probably the two ends of a disturbance brought about by the intrusion into Armenia of new-comers from beyond the Caucasus, which was beginning at about the time of the first-named movement (*cf.* Forrer, *Sitzb. Preuss. Ak. Wiss.*, 1919, p. 1036). Anyhow, the chronological order of their appearance accords with their geographical situation; things belonging to the nearer Syro-Cappadocian area appearing earlier than those from the more distant Caucasus.

It becomes increasingly clear that there were strong North Syrian and Anatolian elements among the Hyksos invaders of Egypt in the Intermediate Period between the XIIth and the XVIIIth dynasties (Frankfort, *Studies*, II, pp. 167-9).

In the time of the great conquering Pharaohs of the XVIIIth dynasty it is, of course, well known that Egypt entered on a period of close connections with the far North which lasted on until the XXth dynasty.

This rapid survey of the continuous connection that there was between Egypt and eastern Asia Minor and the fact that Armenia is not only rich in obsidian but also used it largely, and without much doubt exported it, all make it quite unnecessary to look to the out-of-the-way island of Melos for the place of origin of the obsidian that is found on Egyptian sites. In fact, Bosanquet remarks on it, that Melos did not seem to trade its obsidian to the East, for, with the exception of Troy, he was unable to hear of any having been found on the Asia Minor coast, and, after all, this is only in keeping with the well-known absence of Minoan relics from these shores.

To cap the whole argument there now comes the result of the interesting comparative table of the physical qualities of specimens of obsidian from various sites, which is published as an appendix to Frankfort's *Studies* (pp. 190-2). It is here shown that of all the obsidians, that from Melos is the most unlike the specimen from Egypt, which latter, in fact, stands apart from all those of the western Mediterranean, Greece, and the Aegean. The greater part of the obsidian from Egypt, especially that used for luxury purposes, is of a beautiful, smooth, even texture, of a coal-black colour, quite opaque, and on the fracture looking exceedingly like pitch. Therefore, Lynch's description of one of the obsidians from Nimrud Dagħ in Armenia, which he says is "pure and black as jet," "coal-black in hue," and again, "jet-black," would seem to suit remarkably well that quality generally employed in Egypt. His description of the other variety from Nimrud Dagħ as "dark-green obsidian, which was glittering in the sun," would probably suit most of those Egyptian flakes which are not struck from the first-named material. Specimens of obsidian from the crater of Nimrud Dagħ have been deposited by Oswald, Lynch's companion, in the South Kensington Museum of Natural History, where they are numbered B.M. 1917, 631, 16. They are of the two kinds described above, firstly, the quite opaque sort, such as was used in Egypt for objects of luxury; and secondly, a variety which becomes translucent as the flake thins towards the edge, exactly as do the flakes from Egypt. When held up to the light this latter is seen to be of a yellowish-greenish tinge. As soon as he sees these specimens anyone who is conversant with the Egyptian material will recognize the close similarity, not to say identity, of the two.

In view of what has been said in this article, it is much to be hoped that some Egyptian specimens may be sacrificed in spite of their rarity in order that a series of comparative studies may be made between them and examples from Armenia. Seeing that the appearance and the above-quoted superficial description of the obsidians from Nimrud Dagħ correspond so strikingly with the well-known qualities imported by Egypt, and seeing that Nimrud is also the nearest to Egypt of the Armenian sources, it seems likely that researches carried out on examples from this mountain would turn out to be profitable.

As one of the characteristics of the Alagöz obsidian is its transparency it might be that some of the objects from Egypt and Mesopotamia, which are described as being made of "smoky quartz," would prove to be made of the clear obsidian from this mountain of Inner Armenia; de Morgan states that he has presented a complete series of specimens from Alagöz to the St. Germain Museum (*Syria*, IV, p. 26, n. 4).

DATE & PROV: OBSIDIAN REFERENCE.

PREHISTORIC

SD.34.	NAQADAH 1260	FLAKE
43.	DIOSPOLIS U207	FLAKE
56 alt.		FISH-TAIL KNIFE
57 alt.	DIOSPOLIS	DISC BEADS
60 alt.	NAQADAH T43	PIERCED FLAKE
44-60	QAU 1629	FLAKE
43-70	GERZAH	FLAKE
PREHISTORIC		LARGE FLAKE
"	NAQADAH 499	CHIPPED DISC BEADS
"	HIERAKONPOLIS	1 OR 2 FLAKES

PETRIE, PREHISTORIC EGYPT. p.43
 " DIOSP. PARVA. I. 33.
 BERLIN MUSEUM no 15772.
 PETRIE, DIOSP. PARVA p. IV.
 " PREHIST. EGYPT. p.43, pl. XLV. 46.
 TO BE PUBLISHED SHORTLY
 PETRIE & OTHERS, LAB. CERAM. MAZ. p.24.
 UNIV. COLL. COLLECTION.
 PETRIE, PREHIST. EGYPT p.44.
 QUIBELL, HIERAKONPOLIS II. p.12.

PROTODYNASTIC

MENES	NAQADAH	VASES
"	ABYDOS	COMB
ZER	"	VASE
MERPABA	"	"
"	"	2 SCRAPS of a VASE
PROTODYNASTIC	HIERAKONPOLIS	DISC BEADS
"	ABYDOS	A PIECE
"	NUBIA	FLAKES

625-627
 deMORGAN, RECH. ORIG. EGYPT. 1897. figs
 PETRIE, ROYAL TOMBS II. pl. XXIII. 10.
 " " II. pl. XLVIII. 087.
 " " II. pl. XLVIII. X 106.
 UNIV. COLL. COLLN. W38.
 QUIBELL, HIERAKONPOLIS II. p.52.
 FRANKFORT, STUDIES II. pp. 191. 192.
 ASWAN MUSEUM

OLD KINGDOM

VI. DYN.	HIERAKONPOLIS	EYES of STATUES, PEPY & SON
VI. DYN.?	"	EYES of GOLD HAWK'S HEAD
O.K.?	"	EYE of VERY LARGE BIRD STATUE

QUIBELL, HIERAKONPOLIS II. p.46. pls LII, LVI.
 " " II. pp. 33. 45.
 U.C. COLLN MARKED HIERAKONPOLIS 242

MIDDLE KINGDOM

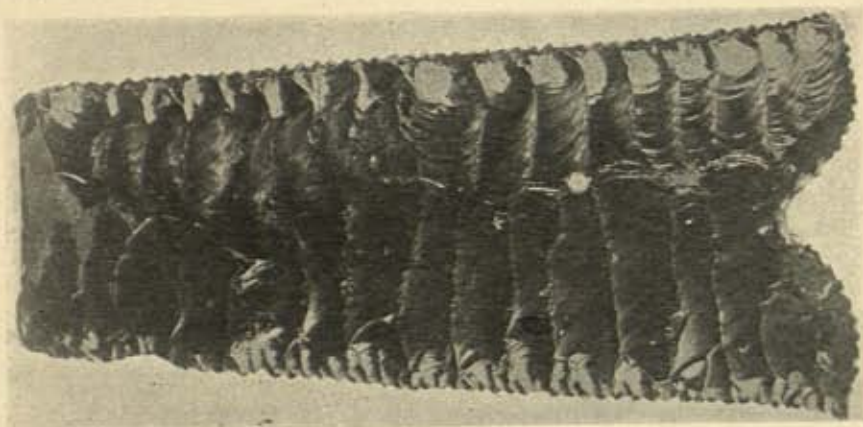
PRE XII DYN.	THEBES	EYES COFFIN of AMAMU
EARLY XII	LISHT	EYES from COFFINS
SENUSEPT II.	AMENEMHET III	{ 1 KOHL POT 3 TOILET JARS 1 MIRROR HANDLE
	LAHUN	
SENUSEPT III.	DAHSHUR	
SENUSEPT		5 TOILET JARS
AMENEMHET III	BYBLOS	PIECE of LARGE RING
"	III	TOILET JAR
AMENEMHET IV	THEBES	HEAD
		BALL BEADS
XII DYN.		HEAD of STATUETTE
"		SCARABS
LATE MIDDLE KINGDOM	DAHSHUR	EYES from HOR'S MUMMY CASE
		SCARABS NEFER-ANKH-RE
		VASE MER-NEFER-RE
		SCARABS
		"
		" INSCRIBED SHESHONQ

BRIT. MUSEUM no 6654.
 MACE & WINLOCK, SENEPTISI pp. 30. 40.
 BRUNTON, LAHUN I. pls IX. XI. p.36.
 625-627
 deMORGAN, DAHCHOUR 1894. p. XXV. p.71.
 PETRIE, SCARABS & CYLINDERS. p. XIII. 33.
 NAVILLE, SYRIA III. pp. 291 ff.
 RICKETTS, J.E.A. IV. pl. XIV.
 CARNARVON & CARTER, FIVE YEARS' EXPLORNS at THEBES. pl. LI. 2 pp. 7. 55.
 BULL. METROP. MUS. SUPPL. 1911. fig. 17.
 PETRIE, SCARABS & CYLS. pl. XV. BA-BG. 107A.
 LACAU, SARCS. ANT. NE. no 28100. pl. XIX. p. 77.
 PETRIE, SCARABS & CYLS pl. XVIII. 1. 2.
 PIER COLLECTION.
 PETRIE, ANC. EGYPT. 1926. pp. 12. 13. Nos. 1. 4.
 NEWBERRY, TIMMINS COLLN. p. 15. no 49.
 HALL, B.M. CAT. SCARABS. p. 241. no 2405.

OBSIDIAN OBJECTS FROM EGYPT.

The finest obsidian implement from Egypt is the forked lance-head decorated with the beautiful ripple-flaking which is reproduced full-size in the accompanying figure, by kind permission of the Berlin authorities. It is probably the only one of its kind, and was bought in 1902 for the Berlin Museum, where it is now numbered 15772. It has certain peculiarities beyond the material of which it is made, and these are that the serrations of the edges are very much larger than usual, and also that, being a forked lance-head it is decorated with the ripple-flaking which is proper to the long knives with the blunt noses and slightly upturned tips. None

of the other lance-heads of this type that I have seen have this, though an approximation is attempted on one or two examples of the later varieties of the shape (*Naqada and Ballas*, Pl. LXXIII, 65; Currelly, *Stone Implements*, No. 64864). As a rule they are covered with quite irregular and comparatively rough flakings. However, this collocation of forked shape and ripple-flaking is valuable, for it enables the piece to be dated with considerable accuracy, because the implements of this shape are rather earlier than the knives which regularly bear this decoration. Of the forked lance-heads published the shape of the Berlin specimen is most like the later development, which began at s.d. 47, and so far as is at present known did not last after s.d. 52 (Petrie, *Diospolis Parva*, Pl. IV). Similarly, the ripple-flaking had a very short vogue, for at present it is not known before s.d. 57 or after s.d. 63 (Petrie, *Prehistoric Egypt*, p. 49). Seeing that the



implement under discussion has the shape which dies out about s.d. 52, but the decoration which arises about s.d. 57, we shall not be far wrong in dating it to s.d. 55. Suitably enough this date is right in the middle of the period of Asiatic infiltration, which Petrie takes to begin about s.d. 50 and to become intense by s.d. 60 (*Prehistoric Egypt*, p. 49).

The predynastic disc-beads of about s.d. 57 from Diospolis Parva may be those now in the Fitzwilliam Museum.

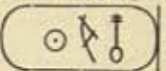
Dr. Scharff kindly informs me that a piece of the neck of one of the obsidian vases from the Royal Tombs at Abydos is now in Berlin, where it is numbered 15456, and Newberry says there is at the Liverpool Institute of Archaeology a fine piece of an obsidian vase from the Neithotep tomb at Naqadah.

The use of obsidian as an inlay representing the pupil and iris of the human eye began with the Pepi statues of the VIth dynasty, contemporaneous with which is probably the golden hawk's head, where obsidian is also used for the eyes. It did not become common, however, until the XIIth dynasty, though even there it took a long time to replace the old-fashioned crystal. Of the five pairs of eyes from the Dahshur coffins, now exhibited in the Cairo Museum, four are of crystal, while only one is of a black stone, which Mr. Lucas tells me is probably obsidian. The instance of King Hor (from Dahshur) is curious, for the eyes of his big wooden statue and also those of a small statuette are of crystal, though those from his coffin are of the new-fashioned obsidian (Lacau, *Sarcs. ants. au N.E.*, No. 28100, p. 77, Pl. XIX; and de Morgan, *Dahchour*, I, p. 95, No. 7, for the statuette).

In the scarcity of obsidian the Old Kingdom stands in strong contrast with the preceding and succeeding ages which used so much of it; for here we are only able to record three specimens, and each of these is used for the one purpose of representing eyes. The rarity of it at this period is emphasized by the contents of the tomb of Hetep-Heres at Gizah, where it is not mentioned at all; a very different state of affairs from the number of vases made of it, which were found in the royal tombs of the Ist dynasty and in those of the XIIth dynasty, where the stone figures very largely indeed. It is not possible to suppose that the Egyptians at this time were cut off from the source of supply, for the Old Kingdom is well represented among the objects found at Byblos. Presumably, therefore, the fashion had changed.

From Lahun comes a mirror-handle of obsidian, but the Egyptians never seem to have used the stone for their mirrors as Pliny says the Romans did (*N.H.*, XXXVI, 67), though he also says that, being very dark, it reflected the shadow rather than the image. It is, no doubt, this use that gave it its name of "opsian" stone.

The scarab now bearing the name of Sheshonq is included among those of the Middle Kingdom, where its form places it beyond a doubt. The name must have been added in the XXIInd dynasty to an old scarab that had been found.

Newberry possesses a drawing, which he made, of a small bag-shaped obsidian vase about 1½ inches high, and bearing the name of , a king of the Second Intermediate Period.¹ When he made his notes on the subject the vase was in the possession of Mr. Chatfield Pier, of Chicago, but it is not published in the catalogue of his collection.

Pliny states that a statue of obsidian was found in the collection of a Roman prefect of Egypt, and was returned by the Emperor Tiberius to the people of Heliopolis from whom it had been taken (*N.H.*, XXXVI, 67). If it were a large statue it was no doubt like the XVIIIth-dynasty one, from which came the face and other parts now numbered 42101 in the Cairo Museum. If, on the other hand, it was only a statuette, then it could be matched by the Middle Kingdom ones, of which the heads are still in existence to-day: that of Amenemhet III, and the other now in the Metropolitan Museum. In the same place Pliny also says that Augustus consecrated in the temple of Concord four statues of elephants, which were made of "obsian stone," though he does not indicate the size.

The Berlin block of obsidian, No. 21192, is exceedingly interesting, for the sculptor has just begun work on it with a view to making a pair of seated figures presumably of Akhenaton and his queen. It was found in the German excavations at Tell el-Amarna, and is about 8 inches in height.

The eyes of the statue of Queen Tiya are not included here, for Borchardt only describes them as being made "aus schwarzem harten Material" (*Porträtkopf der Königin Teje*, p. 10), and Scharff confirms it for me that it is impossible to say more without an analysis, which is, of course, out of the question. It is, however, most improbable that they should not be made of obsidian.

In the later examples of eyes the possibility that the substance of which they are made might be black glass should be taken into account, though in no case quoted does the material look like it, or show any of the patination so often seen on ancient glass.

¹ [This is the well-known king Ay, the 28th of the XIIIth dynasty, who has left a gateway at Karnak and many scarabs.—Ed.]

DATE & PROV.	OBSIDIAN	REFERENCE
<u>NEW KINGDOM</u>		
ANTEF VII. THEBES	EYES of MUMMIFORM COFFIN	B.M. 4652. GUIDE FIRST & SEC. EC. RMS 35
XVII DYN. "	KOHL POT	PETRIE. QURNEH. pl. XXV. p. 8.
"	SCARAB	NEWBERRY. TIMMINGS COLLN p. 90. no 19.
THOTHMES IV. CUROB	"	LOAT. CUROB. pl. IV. 9. p. 7.
AKHENATON AMARNA	BEGINNING of STATUETTE	BERLIN MUSEUM no 21192.
TUT-ANKH-AMUN THEBES	EYES of MUMMIFORM COFFIN	CARTER. TOMB of T-A-A II. pls LXVI. LXVII. p. 247.
"	EYES of MASK	" " LXXIII. p. 254.
"	EYES of VULTURE	" " LXXVIA. p. 257.
MID XVIII DYN. THEBES	FACE & PARTS LIFE-SIZE STATUE	LEGRAIN. STATS & STATUETTES I. no 42101. pl. LXIV. pp. 58, 59.
"	HEAD of STATUETTE	" " no 42102 p. 59. pl. LXIII.
RAMSES III? NEW KINGDOM	SCARAB	PETRIE. SCARABS & CYLS. pl. XLII. no 123.
"	TOILET JAR	CARN: SCARTER. FIVE YEARS' EXPLOR. AT THEBES. p. 78. no 33.
"	PART of a WIG	UNIV. COLL: COLLN
"	FGMT LARGE PECTORAL SCARAB	" " "
ETHIOPIAN PERIOD } NAPATA }	SMALL LUMPS	138. GRIFFITH. L.A.A.A. IX. pl. 119. X. pp. 120, 123.
XXVI DYN.	PECTORAL SCARAB	BRIT. MUS: no 15501.
EARLY PTOL. TUNAH	EYES PETOSIRIS MUMMIF. COFFIN	CAIRO MUSEUM.
II-4 CENT. A.D. AKHMIM	EYES of COFFIN	B.M. 29584. GUIDE p. 80. pl. XXIII.
III-4 CENT. A.D. " ?	" of HEADPIECES	B.M. 21807. 54 058. GUIDE pp. 82, 83.

UNDATED OBJECTS

SERABIT FLAKE	UNIV. COLL: COLLN
KOPTOS "	"
T. ELAMARNA	NUMBER of FRAGMENTS
	2 LARGE LUMPS
	BEARD of STATUE
QUFT	GAMING PIECE
	AMULETS:—
	HEART
	SMA
	NEFER
	DAD
	PESH-KAF
	PLUMES
	PAIR of FEATHERS
	CROWNED SUN
	WRITING TABLET
	CIRCLE of ISIS
	SCARAB
	UZAT EYE
	TWO FINGERS
	138. PETRIE. OBJECTS DAILY USE. pl. XLVIII. 137.
	PETRIE AMULETS:—
	p. 10
	pl. I. 17 A. B. C. E.
	pl. III. 31. A. p. 15
	p. 115
	pl. IV. 38. D. E. F. p. 16.
	pl. IV. 39. A. B. p. 16.
	p. 17.
	p. 17.
	p. 21.
	p. 23.
	pl. XI. 92 A. p. 25.
	p. 34.
	p. 51. pl. XLIII. 273. C. D.


Of the two large natural lumps of obsidian at University College, one is about the size of a man's head, and it must have been a piece like this that was utilized for the head of the statue, No. 42101 of the Cairo Museum, and for the solid statues of the Emperor Augustus which Pliny says he himself had seen (*N.H.*, XXXVI, 67).

The gaming-piece is a beautiful little object, conical in shape, which was bought from a *fellah* at Quft along with its companion in crystal. It thus has no date, and but doubtful provenance.

The flake from Serabit, in Sinai, is quite unusual in being of an opaque greenish-grey colour. Those from Hierakonpolis are described as being of a greenish-black.

It should be observed how very regularly the amulet of the two fingers is made of obsidian, being in this point in striking contrast with the other amulets which vary greatly in their substances.

Obsidian does not seem to have been used in jewellery in Egypt, though Pliny says (XXXVI, 67) that it was so in Rome. The Romans seemed to have been attracted by black stones, as they were fond of the onyx, which is black and banded with white.

There is a stone which is not uncommonly mentioned and which is called , *ds*. The word is determined with a knife and a stone, hence is likely to be the name of a material of which stone knives were, or might be, made, and indeed, the name of this material actually supplied one of the words for "knife." Black *ds* and white *ds* are mentioned together (Loret, *Rec. de Trav.*, IV, p. 21, section 50; V, p. 94, col. 142), and Newberry makes the very probable suggestion that the two words mean "obsidian" and "crystal," respectively. It is, indeed, exceedingly likely that they should, for these two materials do, in fact, often go together, as, for instance, in the Archaic Period, when crystal vases occur in considerable numbers along with the obsidian ones named in the lists (Petrie, *Royal Tombs*, Vol. I, Pls. IV, 1, 7; V, 8, 9; VI, 5, 6; VII, 4, 6, 7, 12; XXXVIII, 2; Vol. II, Pls. XLVI and XLVII; de Morgan, *Le Tombeau Royal de Négadah*, figs. 608-24); the pair of gaming-pieces, of which one is of black obsidian and the other of clear crystal. Obsidian and rock crystal were both used at Napata, and once, at least, definitely in connexion with each other (Griffith, *L.A.A.A.*, IX, p. 119; X, pp. 120 and 138). *Ds* is generally translated "flint," but in view of the mention of the two colours of *ds* side by side, "obsidian" and "crystal" would seem to be preferable, especially as crystal flakes were found by Brunton at Badari. A *wzsf* sceptre, which was made of *ds* is mentioned in the Book of the Dead (Budge, *Book of the Dead*, 1898; *Text*, p. 263, ch. CXXV, l. 25), and crystal is quite a likely substance for such an object to be made of; for if it were a small amulet many of these are often cut out of a piece of stone, such, for instance, as carnelian, while, if, on the other hand, it were of the full size, it might quite well have been built up of rods of crystal in the same way as the well-known sard stick of Archaic date is treated (Petrie, *Royal Tombs*, II, Pl. IX, 1, pp. 13 and 27).

THE ABYSSINIAN AND EAST AFRICAN OBSIDIAN FIELDS.

There is yet one more obsidian field from which Egypt might be thought to have imported the stone, and this is Abyssinia. Obsidian is found in many places in this country. Thus, Mr. Jannasch writes from Adis Abeba: "The formation throughout is a very young volcanic one. Four kilometres in a south-easterly direction from my domicile lies a mountain complex covered with pumice-stone and logs of obsidian." In the Cairo Geological Museum there is a specimen of obsidian from the Aluto Mountain near Adamitullu, Abyssinia; it is numbered 13398. Schweinfurth brought back specimens of obsidian from Halfen, in Abyssinia, two of which are now in this museum, where they are numbered 5535. Obsidian was found by Salt (*Voyage to Abyssinia*, pp. 193-4) in the Bay of Hawakil, near Ras Hanfilah on the coast of Abyssinia, which no doubt is, as he recognized, the deposit to which the author of the Periplus of the Erythraean Sea refers in the 1st century A.D., when he says (section 5): "And about eight hundred stadia beyond (Adulis) there is another very deep bay with a great mound of sand piled up right at the entrance, at the bottom of which the obsidian stone

is found, and this is the only place where it is produced." The obsidian on the shore is found in small lumps of 2, 3, or 4 inches diameter, but the natives said that a few miles further into the interior pieces were found of much larger dimensions (p. 192). Writing at about the same time as the author of the *Periplus*, Pliny also speaks of obsidian as being found in Ethiopia, and no doubt refers to this same deposit at Hawakil Bay near Ras Hanfilah. He calls it "obsian stone," and says: "... obsian glass, a substance very similar to the stone which Obsius discovered in Ethiopia. This stone is of a very dark colour, and sometimes transparent . . ." (*N.H.*, XXXVI, 67). He reports that it was also found in India, Samnium in Italy, and on the western coasts of Spain.

There is, however, no evidence at present and, indeed, little likelihood, that Egypt was accustomed to import her supplies from the Abyssinian coast. That fact that Egypt and Abyssinia are both on the same continent of Africa should not lead us astray into thinking that intercourse between them was easy. In the first place Hawakil Bay is more than half as far again from Cairo as is Nimrud Dag in Armenia. To the greater distance there must also be added the difficulties of the voyage along the coasts of the Red Sea, which are well known. It is not likely that the obsidian from Inner Abyssinia should have come to Egypt down the Nile, for nothing is heard of such tribute at the time of Egypt's greatest extension southwards in the XVIIIth dynasty, and, in the great days for obsidian in Egypt, the XIIth dynasty, Egypt's southern frontier was no further away than the Second Cataract. Moreover, before the Ptolemies opened up trade with these countries, such intercourse as there was between Egypt and the southern Red Sea was very occasional and intermittent. The expeditions of Sahure and Isesi in the Vth dynasty; Pepy II's unsuccessful one, in which the leader was killed, and his other successful one in the VIth dynasty; Amenemhet II's in the XIIth dynasty; and Hatshepsut's in the XVIIIth dynasty, and the "Marvels of Punt," which were brought to Thothmes III soon afterwards, were not examples of what was commonly going on, but brilliant exceptions, worthy of being recorded in inscriptions. This lack of communication between Egypt and Abyssinia stands in marked contrast with the closeness, the continuousness and the permanence of the contact between Egypt and the Far North, which actually resulted in the affecting of the physical characteristics of the race and in the providing of the country with one of its chief gods, with kings, and with its main crops. All of this, added to the comparative nearness of Asia Minor to Egypt, and the noticeable similarity of the obsidian found in the crater of Nimrud to that commonly used in Egypt, only increases the probability that Armenia will be found to have been the country that provided Egypt with her obsidian rather than Abyssinia.

In closing, it may be mentioned that all through Kenya Colony, and especially near Kikuyu, quantities of obsidian implements have been discovered, and there are considerable deposits of obsidian near Lake Naivasha (Dewey and Hobley, *Man*, 1925, No. 51); but this, of course, is quite out of the question as a source for the obsidian used in Egypt.

G. A. WAINWRIGHT.

REVIEWS.

Journal of the Society of Oriental Research. April, 1927.

MERCER, S. A. B.—*Babylonian and Egyptian Triads*. The great Babylonian triad is Anu god of heaven, Enlil of earth, and Ea of water. They were all male deities, whose wives Antu, Ninlil, and Ninki had many children. Another triad was Sin the moon god, Shamash the sun, and Ishtar the star; in that triad one was female. Other triads of male gods were Ea, Marduk, and Nusku; Ea, Marduk, and Gibil; Sin, Shamash, and Adad.

Egyptian triads were Nut goddess of heaven, Geb god of earth, and Nu of water. Such was only a theologic speculation, as a triad they scarcely appear. Other triads were Amon-Ra, Mut, and Khonsu; Ptah, Sekhmet, and Imhetep; Sebek, Hathor, and Khonsu; and the popular one of Osiris, Isis, and Horus.

Other groups of gods existed as the Ennead in Egypt, sevenfold gods in Babylonia, Twin gods. The father, mother, and son group is exceptional, and such had no influence whatever on the Christian doctrine of Trinity. Dr. Mercer does not add what is a result of his paper, that the familiarity with the idea of Trinity has unconsciously led scholars in many directions to see triple groups of deities.

Bericht über die photographischen Expedition von Kairo bis Wadi Halfa . . .
Von WALTER WRESZINSKI. 8vo. 105 pp. 77 pls. 1927. (Max Niemeyer, Halle a. S.). 40 marks.

The great publication of the atlas of photographs of important monuments by the author was largely compiled during his expedition in 1925-6 for the purpose. Here he gives the account of his observations on the monuments, copies of inscriptions, and plates of smaller detail and of general views. It forms, in fact, the best illustrated text-book of the monuments off the beaten track, the only publication of many of them. It is an outline of the work which the Egyptian Government ought to have done a generation ago on a larger scale. The many views of Tehneh, of Speos Artemidos, Hermopolis, El Kab, and other sites would be hard to find elsewhere. The volume makes a notable addition to the works of reference.

Note on R. O. Faulkner's Review of an Egyptian Grammar by S. A. B. Mercer.

As the Editor of the Oriental Research Series in which Dr. Mercer's Egyptian Grammar was published, I may be allowed to criticize the review contributed by R. O. Faulkner in *ANCIENT EGYPT*, June, 1927, pp. 60-1.

First, it should be noted that Dr. Mercer's book would have appeared several months before Gardiner's, had it not been for printer's delays. Passing by trivial criticism, it should be observed that on the subject of the double *n* on p. 12, we find that Erman-Grapow, in the new *Wörterbuch* of 1926, continues to give only "*bḥn·t*" (without the *nw* sign), with the meaning "tower," "pylon." There are two different words, "*bḥnw·t*," which mean "pylon," "tower," and "*bḥnnw*" (with both the *n* and *nw* and without a *t*), which means "house" (cf. Budge's Edition of the *Tale of Two Brothers*, 19, 6; 27, 5; Mercer's *Chrestomathy*, p. 133, sec. IX, l. 1, where it is explained as a "house" (*pr*)). As for "*rḥnnw*" and "*pnnw*," they might have been pronounced as if there were only

one *n* or two. But who knows? In a book for beginners it is sounder pedagogy to transliterate the text as it actually was written by the Egyptians themselves. I am inclined to think that the double writing of the consonants is not accidental.

As for the "*špr*" it is much to be regretted that Mr. Faulkner apparently limits his investigations of Egyptian lexicography to the abbreviated lexicon at the end of Gardiner's Grammar. Had he looked up Erman's *Handwörterbuch*, p. 158, he would have found the meaning "*Kommen zu*" given first. He may also refer to Battle of Kadesh, l. 14. As for the spelling of the Egyptian word for bolt, we refer him to stela of Piankhi, l. 104, where it occurs just as Mercer has it.

In his criticism of p. 27, secs. 62-4, the confusion is apparently in the reviewer's mind only. As for me, I am unable to comprehend why the "pronominal object of the verb" is a clearer use of the English language than "accusative" used by Mercer.

As for the "pseudo-participle," Mr. Faulkner might as well have seen on p. 38, n. 14, that Dr. Mercer did *not* forget that with transitive verbs such as *šdm* the old Perfective is always passive in sense except in one case. This Mr. Faulkner chooses to ignore. Note, however, that Erman keeps the active meaning of the pseudo-participle.

I may say that I studied Egyptian with Dr. Mercer eleven years ago; he has had other pupils since. This Grammar was evolved under the constant test of experience. Unless Mr. Faulkner points out the other "various errors" that he mentions, we feel justified in saying that one can only regretfully record the verdict that this review is not a safe guide to the student nor a help to the teacher.

J. A. MAYNARD.

[Further details on these questions would be best considered by private correspondence.—ED.]

Glozel Again.

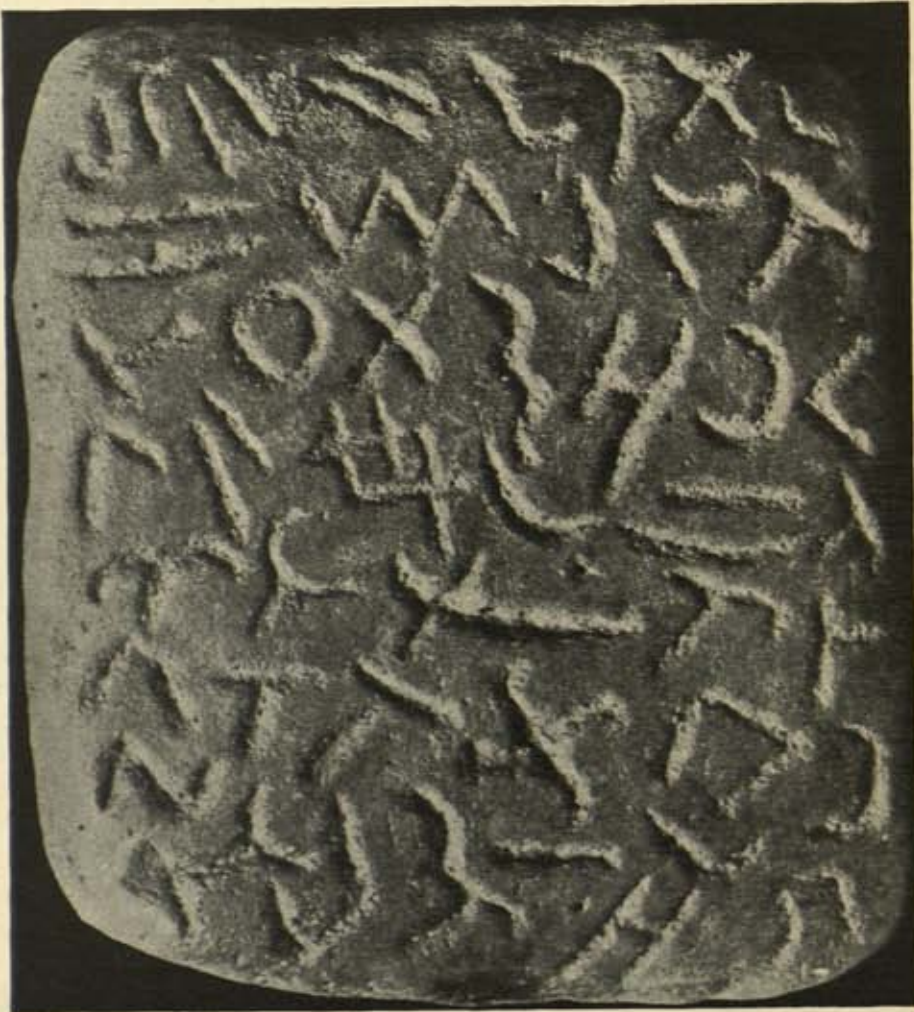
THERE has been a fervent period of assertion and counter-assertion in France lately about the objects unearthed at Glozel, near Vichy. So much has appeared in the daily press that it is needless to recapitulate the details of the supposed discovery. But after many visitors had been there with varying result, a civil engineer, M. Vayson de Pradenne, a friend of Dr. Morlet who had published the supposed antiquities, has now looked at the site critically. Where he found objects under unbroken earth there was a soft layer sideways to the front of the block, so that objects might be pushed into their designed stratum. The wrought bone he declares to be either recent boiled bone or else old surface-weathered bone, none of it mineralized. Now that there seems no question about the forging of antiquities here, it cannot prejudice the case to state the result of an analysis of the supposed writing. One of the many tablets is shown on p. 96 to give reality to the subject. If these tablets were in any real language it must be expected that, as they all come from one place, there would be some words many times repeated. If so, there should be frequent collocations of some pairs of signs. Accordingly a cross-table was prepared, with a column and a row for each of the eighty or ninety signs. Then the total number of pairs was counted, and the number of pairs that were alike, and of triplet repetitions. These coinciding pairs were not more than should be found by mere chance in the total. Therefore, there were no words repeated, and, if so, no definite purpose in the tablets. They show the mis-spent ingenuity of an uneducated mind.

NOTES AND NEWS.

THE British School party will be of five workers, Messrs. Starkey, Harding, and Floyer, with Lieut. Risdon and Miss Tufnell. They will be engaged in the coming season on the excavation of a great site of the Bronze Age, some miles south of Gerar. It is intended there to continue the same systematic search in the strata, of an earlier age than was cleared last winter, and so extend the detailed history of objects. Some shorter work will be undertaken first, before the rainy season.

The publication of Gerar with 72 plates is now in the printer's hands, and it is hoped to supply it to subscribers before Christmas. Two other volumes on Qau and Badari are also being printed, and will soon be issued. The length of important articles in this number delays many reviews, which will appear with the quadrennial index in the next number.

The Fayum, so long neglected, is a favourite region of research now. Prof. Breasted with Mr. Sandford, also Miss Caton-Thompson, beside Mr. Brunton, are all going to different sites on the desert. May they each help to explain the early anthropology.



CLAY TABLET FROM GLOZEL (see p. 95).

ERRATA IN LAST NUMBER.

Page 57, line 7 up.—For "grit" read "frit."

Page 61, line 7.—For "*b nw*" read "*bñw*."

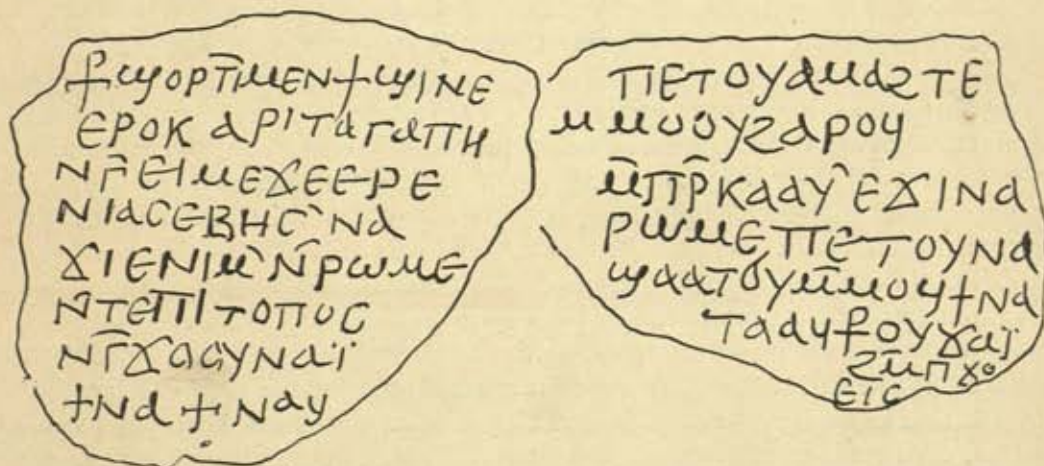
Line 26.—For "*s m*" read "*sdm*."

ANCIENT EGYPT.

A COPTIC OSTRAKON.

THIS ostrakon, which is on limestone, was bought in Luxor in 1920. There is no provenance.

Translation.—First, then, I greet thee. Please (lit. have the goodness) to know that the wicked are about to take some one of the men of this place, and to instruct me. I will give to them him whom they insist on. Do not allow them to take my men. The [one] whom they shall need, I will give him. Health in the Lord.



There is no indication as to the writer of the letter or to his correspondent, though it is evident that it is a communication to a superior, as the writer asks for instructions.

I have translated **ⲁⲙⲁⲛⲧⲉ ⲙⲙⲟ** = as "to insist on," on the suggestion of Sir Herbert Thompson; although, as he points out, there is no actual parallel. The reflexive use of **ⲁⲙⲁⲛⲧⲉ** is rare; see Sir., XVIII, 30; XX, 1; Budge, *Mart.*, 117; Leip. *Epiphanius*, 104/3; C.S.C.O., 73/86, for examples of such use. The nearest approach to the meaning of the word in this connection is in e.g. Leip., *Epiph.*, 107/4, where it means "to stand firm." The literal translation would therefore run, "they stand themselves firmly," or, perhaps, "they set themselves firmly."

M. A. MURRAY.

FURTHER NOTES ON DUALISM IN AFRICAN RELIGIONS.

THE good and evil gods of the Nilo-Hamitic group of East Africa are manifestations of the elements. The Gāla, in addition to their god *Wak*, believe that there are two kinds of sunshine, *adu* (from *adi*, "white"), the bad sunshine, which destroys, and *biftu* (from *bifa*, "colour"), the good sunshine, which gives life. *Adu* is apparently from the same stem as *Adi*, a fabulous being, white in colour, and a sort of *Ἐμπουσα*. The black and red gods of the Māsae (*eng-aĩ*, "god," is properly "sky") are the heavens in fine weather and in storm, or, rather, in the dry weather and wet weather. The Nandi *ilet ne mie* and *ilet ne ya*, "the good thunder and the bad thunder," are not distinguished by colour. Lightning in Nandi, in addition to being called the "swords of the thunder," is also spoken of as the "wings of the thunder" (*kepepaiik ap ilet*). The more primitive tribes of the Nandi sub-group, such as the Suk and Tuken, do not, apparently, hold any such beliefs (Beech, *Suk*, p. 19), though the Suk say that *Torōrut* ("sky") or *Ilat* ("rain"), by which names they indiscriminately designate their supreme god, "is like a man in form, but has wings . . . the flash of which causes the lightning, and the whirring thereof is the thunder" (Beech, *Suk*).

From Kolben's account of the Hottentots (printed in *The World Displayed*, Vol. X, London, MDCCLX) it appears that the Hottentot ideas of good and evil gods are somewhat different from those of the Nilo-Hamites. Kolben enumerates three gods: (1) *Gounja Tiquoa*, "the God of all Gods," who is "a good man, who does nobody any hurt." (2) *Gounja*, "the moon," who is "the subject and representative of the High and Invisible," and who is worshipped as the "distributor of the weather." (3) *Touquoa*, "the father of mischief," and the teacher of witchcraft; he is propitiated by worship and sacrifices. The Hottentots thus seem to have a trinity of two good deities and a third who is bad. The Gāla, Māsae and Nandi, on the other hand, have pairs of gods, one good and one bad, in addition to their supreme gods, and they do not regard these pairs as coming within their ceremonial system. The Nandi, it may be noted in passing, pray to the new moon; but they do not regard the moon as a god. The Māsae, however, say that the sun (*eng-olong*, fem. gender) is the husband of the moon (*ol-apa*, masc. gender, Hollis, *Masai*, p. 273); the Suk, that the moon is the eldest son of *Torōrut* (Beech, *l.c.*); and the 'I-Tiamus (En-jemusi), that the sun and moon are husband and wife (Beech, *l.c.*). The latter tribe believe also in two gods, *Engai*, the sky-god, and *Engop*, the earth-god. Both these are benevolent.

Turning to the beliefs of the Bantu BaGanda, we read that: "Ils admettent néanmoins l'existence d'êtres invisibles, supérieurs à l'homme, désignés sous le nom générique de Lubali. L'un de ces esprits porte même le nom de *Katonda*, dérivé du verbe *kutonda*, "créer," et qui signifie Créateur. Ces génies ont des attributions diverses: les uns sont bons, et ne savent que faire du bien aux hommes; les autres méchants, et c'est à eux qu'on attribue tous les maux qui affligent l'humanité. Chaque Lubali a ses représentants particuliers, qui prennent son nom, et prétendent être en rapport avec lui." (*Manuel de langue Luganda*, par

les pères L. L. et C. D. des Pères Blancs, Einsiedeln, 1894, p. 7.) The worship of the Ganda sky-god Kazoba, "whose name seems to mean Sun"¹ (Sir C. Eliot in Hollis, *Nandi*, p. xxiii), is attributed to BaHima influence, on the assumption that the BaHima are of Hamitic stock. It does not, however, appear that the belief in Lubali is due to Hamitic influence.

The Azande ("Nyamnyam") believe in the existence of ghosts, of ancestors, *átolo*, who must be propitiated, and of malignant spirits, *ágilisa*, of which some say, "evil *átolo* are the *ágilisa*." (J. E. T. Philipps, "Religion among the Azande," *Journ. Royal Anthropological Institute*, LVI, pp. 180, 183.) These correspond more or less to the Ganda Lubali.

The Lugwari of N.W. Uganda, a tribe akin to the Madi, believe in two gods, *Adronga*, the creator, who is benevolent, and *Ori*, who is evil (*ori*, pl. *orindi* = "spirit"). (R. E. McConnell, "Notes on the Lugwari Tribe," *Journ. Royal Anthropological Institute*, LV, p. 461).

The beliefs in good and evil forces in opposition may be divided into three groups:—

- I. Where the two forces are the elements, and subordinate to the chief deity, as among the Gāla, Māsae and Nandi.
- II. Where the forces are spirits, as among the Ganda, Azande and Lugwari.
- III. Where the worship is that of a trinity, the third member of which is evil, as among the Hottentots.

The dualistic beliefs quoted by Mr. N. W. Thomas in his paper on "Dualism in African Religions," in *ANCIENT EGYPT*, 1922, p. 109, seem to belong to the second group. The above facts show, I think, that belief in dualism is not limited in East Africa to tribes of Hamitic speech, as Mr. Thomas states (*l.c.*, p. 110). We may note here that the Suk, though they do not come into any of these groups, seem to possess a complete theogony, which, as far as our limited knowledge goes, is not shared by the other tribes closely akin to them.

That the same colours appear in different parts of Africa as attributes of good and evil gods is probably only a coincidence, though, as Mr. Thomas notes (*l.c.*, p. 109), the opposition between red and black found on the Gold Coast is a singular circumstance. The Gāla in East Africa regard white as the unlucky colour, as has been shown from the cases of the malignant sunshine and the fabulous monster, of which both names seem to mean "white."

G. W. B. HUNTINGFORD

¹ "Sun" in Luganda is *njuba*, *LuIsukha liwa*, *Tavela izuwa*, *Chagga ruwa*; the latter, all three, being the ordinary word for God, as *asis* in Nandi, and *Chieng* in DhoLuo.

REVIEWS

Egyptian Grammar. By ALAN H. GARDINER. 4to. 623 pp. 1927. (Oxford: Clarendon Press.) 42s.

When the long-expected happens it seems almost too good to be true. For fifteen years this *Grammar* has been promised, and at last the promise has been fulfilled.

There is a difficulty in reviewing a grammar; by its very nature it must be a mass of detail, and in a language like the ancient Egyptian, where the script itself is often of importance in elucidating the meaning, the detail is unusually great. The sign-list, for example, alone occupies a hundred pages. In the Introduction, Dr. Gardiner deals with the language, its affinities and characteristics, the writing, the history of its decipherment, and a brief survey of the literature. The *Grammar* is arranged in a series of progressive lessons, an arrangement which has its advantages and disadvantages. With each lesson is an exercise for translation of Egyptian into English and of English into Egyptian; a short vocabulary accompanies each exercise. These exercises begin with short sentences of two or three words and end with long extracts from the Westcar Papyrus. The appendices consist of chapters on the vocalization of Middle Egyptian, the transcription of Egyptian proper names, a sign-list, a vocabulary (both Egyptian-English and English-Egyptian), and a short general index. The volume is sumptuously printed, and the fount of hieroglyphic type has been specially cut from good examples of signs of the XVIIIth dynasty.

In the history of Egyptology there have been three great landmarks as regards the study of the language. The first and greatest was the actual decipherment of the script by Champollion, who may therefore be regarded as the founder of Egyptology. The next landmark was the publication of an Egyptian grammar by Erman in 1894. This made it possible for students to work alone, and gave an impetus to the subject which is still felt. The third landmark is this new *Grammar* of Dr. Gardiner's. Founded, as was that of Erman, on the work of his predecessors, Dr. Gardiner has now, by his deep and wide knowledge, made it possible to explain, and therefore to translate, the *nuances* of Egyptian speech as accurately and exactly as those of Greek or Latin. Nowhere else has the syntax been so completely worked out and so lucidly explained. There is no part of the Egyptian language which has been omitted; no difficulties, which a student may encounter, which are not solved. It is a book which every student, whether a beginner or an advanced scholar, must have at hand; it is indispensable for every Egyptologist.

As, however, a critic must find some fault with a book, no matter how good that book may be, I will point out three defects which strike me, as a teacher of long experience. The first and most serious is the arrangement. The "progressive lesson" form is always clumsy and difficult for reference. The second is that non-verbal sentences are always a stumbling-block to beginners who have no knowledge of Oriental languages, and to begin with these creates an unnecessary difficulty. The third criticism is as to a small, though sufficiently irritating, fault; in the vocabularies for each exercise there is no sort of order, except that the verbs are put first, otherwise the words are not arranged but occur haphazard. It would have been an easy matter to arrange them in the alphabetical order of either English or Egyptian.

But, though I find fault, it must be noted that it is only the arrangement that I criticize. As for the matter contained in the book, there can be only one opinion: the *Grammar* is now, and will be perhaps for a century or more, the standard work on the ancient Egyptian language.

M. A. M.

Les Couvents près de Sohâg. Vol. II. By UGO MONNERET DE VILLARD. 8vo. 65 pp., 67 pls. 1926. (Edition hors commerce, Milan.)

The first volume of this excellent account was noticed in this journal, 1925, p. 113. The present volume deals with the roofing of the apses of the White and Red Convents, the roof of the nave, the annexes of the churches, and the construction and decoration. A large amount of collateral examples are adduced, and four dozen of the illustrations help the reader to follow the comparisons. It is here concluded that the apse cupolas of the White Convent were renewed in the 13th century. The changes that have been made in the cupolas of the Red Convent are discussed. Southern French cathedrals of the 11th-12th centuries are compared, as the same system was used then of covering over the nave by cupolas, which rested on corner arches abutting on the sides of the square, so reducing it to an octagon. The connecting link is considered to be in the transmission through Moslem Spain. The history of the trefoil arch is quoted in many countries, from the East to Spain.

The nave of the White Convent is 41 feet wide, the largest such, with the exception of the church of St. Menas. The roof was originally of timber, like the Italian basilicas, but when that decayed or was destroyed, wood was too valuable in Egypt to allow of renewal. Then it was necessary to replace the roof with cupolas. The danger of restoration is observed, where twenty years ago changes were made which confuse the original design.

The system of having two columns in front of the apse, dividing the space in three, is described as very widely spread; examples are quoted in Egypt, Algeria, early Saxon England, Italy, and Syria. The liturgical reason of it was to give a transverse pathway to the pulpit. It appears in the tomb-chapels at Oxyrhynchos (*Tombs of Courtiers*, xli, 23; xlv, 4).

The discussion does not deal with the evidences of re-use of earlier material obvious in figs. 169 and 170; but a promise of describing this is given, accompanied with a mass of similar sculpture, which will appear in a great volume on the history of Christian art in Egypt down to the 10th century. This would be a work of the greatest interest, which will be impatiently awaited. The excellence of the illustrations in the present volume and the large amount of comparative material will make it a storehouse for study.

Il Monastero di S. Simeone presso Aswân. Vol. I. By UGO MONNERET DE VILLARD. 8vo. 159 pp., 162 figs. 1927. (Milano: Libreria Pontificia.)

The so-called Monastery of St. Simeon is really the Deyr Anbâ Hadrâ. It was cleared of ruin and sand by five months' work in 1924-6. The buildings are here admirably published, in block, and in separate portions with detail, illustrated by photographs showing every aspect. The walls were in many parts well preserved to a height of two storeys, and much is still in fresh and sound condition. There was one entrance, on the east, a projecting porch opening at right angles to the doorway wall. Inside, a row of five chambers each had three brick couches, grouped round a table like a triclinium at Pompeii. The end chamber had two such groups; the whole formed a guest-house for eighteen persons.

In the church, the graffiti show dates of A.D. 729 and onward. The body of the church is 53 feet long, or 67 feet including the sanctuary, and 53 feet wide. It was covered by two large domes over the nave and vaulting over the aisles. The font is strangely in the corner of a small chamber at the south-east; it is a conical vessel, 26 inches deep, the same width at the top, and 17 inches below, formed in a cubical block of brickwork. The author gives a full discussion in 24 pages, comparing the forms of many other Eastern churches. A grotto opening from the north-east corner of the church is covered with painting—busts of saints are framed in a curious key-pattern, of which the source is unknown. Altogether in the lower part of the deyr there are 44 chambers, the purposes of which are mostly uncertain.

On the higher ground is another mass of buildings numbering 146 chambers with an entry on the west, and only three narrow stairways (or only one, on p. 14) communicating with the eastern block by the church, on the upper floor. This entire separation of the two masses of building, and the absence of any church in the higher building, suggests that the upper mass was a convent for nuns. The author regards this, however, as being the residence of the monks, and the lower buildings as being all public. It seems strangely inconvenient to leave only three stairs of access from the upper floor of the lower mass for the whole connection of the establishment, and yet to provide a second large porch entrance on the outside. The separation of nuns seems the probable meaning of the plan, remembering how fundamental the separation of men's and women's quarters was in the Egyptian mansion.

After a description of the construction and organization of the monastery, a final chapter deals with the history of the place, from the time of Hadra, who was the first bishop of Aswan. The original church of Aswan has been destroyed in the modern changes of the place, but the remaining indications and fragments are described. We can only hope that we may have much more of Signor Monneret's work of careful record, before further destructions overtake the neglected remains of Coptic times.

Excavations on the Hill of Ophel, Jerusalem, 1923-25. By R. A. S. MACALISTÉR and J. G. DUNCAN. Sm. 4to. 212 pp., 217 figs., 26 pls. 1926. (Palestine Exploration Fund.) 42s.

This is a record of two seasons' work on the ridge above the Kedron valley, nearly half-way from the Haram wall to the Pool of Siloam. The principal result was the exposure of the eastern wall of the Jebusite town, and an early Hebrew tower and wall. The rest of each field worked was turned over in search of remains,

but it appeared that the ground had been completely cleared by the Maccabees, in continuation of their destructive sweep on the more northern part of the spur. The bulk of the objects found there had been swept off over the eastern wall, and lay between the old wall and the later Maccabean wall in advance of the old wall, lower toward the valley. The study of this region cannot be conclusive unless the slopes on either side of the ridge are completely bared at the same time. The good scheme of the Department, for treating this ridge thoroughly, was frustrated by only one quarter of the work being fully undertaken, while other nationalities preferred more remunerative chances in other places. There were tedious and expensive difficulties raised by the blackmail imposed by speculators in land, and the Jerusalem scale of wages is double of that in the south country, so there were many annoying conditions. Unfortunately the very disturbed state of the site prevented fresh evidences of date being obtained, and the objects found were their own witnesses as to the period. A notable section of the Jerusalem topography has been settled by this work, and the excellent map by Col. Close shows all discoveries in this region. Any subscriber to the British School in Egypt who wishes for this volume at half-price, can obtain it on applying to the Secretary of the British School; an equivalent arrangement has been made for supplying *Gerar* to the subscribers of the Palestine Exploration Fund.

Juden und Griechen im Römischen Alexandria. By H. I. BELL. 8vo. 52 pp., 1 pl. 1926. (Hinrichs.)

This essay gives a careful study of the politics of Alexandria in the first five centuries, where two rival activities were struggling for power—the commercial Greek and the financial Jew. Each had inherited a privileged position, with political rights as founders. When the Romans ruled, the Jews received more favour as helpers of Augustus, and the Greeks lost their independent senate. Hence they were always bickering against the Jews. Mr. Bell regards the anti-Jewish outbursts as swayed more by spite against the Roman than hatred of the Jew. Claudius issued a decree declaring the equality of the Jews in the city, but admonishing them to be tolerant, and not to show contempt for other races. The same difficulties flared up in the massacre of the Greeks under Trajan, followed by the Roman attack on the Jews. Mr. Bell regards the later attack on the Jews by Cyril and his mob as a final crushing of them in the 5th century. Yet the Arab conquest two centuries later gave them specified right of residence at the capitulation, which shows that they were an important body then.

Akephalos, der kopflose Gott. By KARL PREISENDANZ. 8vo. 80 pp., 13 pls. 1926. (Beihefte zum Alten Orient. Heft 8.)

Dr. Preisendanz has dedicated a pamphlet of eighty pages to a careful indexing of the headless god of the late magical papyri. He divides his subject into eleven sections: (1) the headless god in popular belief and (2) on gems, (3) Seth in the magical papyri, (4) figures on the Roman curse-tablets, (5) the headless god in the magical papyri, (6) in the Papyrus Mimaut, (7) in the Berlin papyri, (8) in the Oslo papyrus, (9) doubtful examples of the Akephalos, (10) the Akephalos in the heavens, (11) the Akephalos of gems. In a 16th-century MS. the Akephalos is called "Phonos," which Dr. Preisendanz takes to be a decadent form of Typhonos. This seems to be the main thesis of the pamphlet, i.e. that Seth-Typhon is the headless god, who devours heads to obtain a head for

himself, who tears off the head of Osiris, and is himself beheaded by Horus. Hence the different aspects of the Akephalos, who is sometimes the headless Osiris, as in the representations at Philae and on a sarcophagus in the Cairo Museum, and sometimes Seth after his decapitation by Horus. Dr. Preisendanz does not always agree with certain translators in their use of the word "headless," and he also points out that some of the so-called representations of an akephalic god are due to lacunae in the papyri. He has, however, collected practically all the material on the subject, and his article is therefore of great importance to all students of late magical texts.

M. A. M.

Bases, Méthodes et Résultats de la Chronologie Égyptienne. By RAYMOND WEILL. 8vo. 216 pp. 1926. (Geuthner.) 50 frs.

This work scarcely fulfils the extent of its title, as it does not even quote any of the continuous record of the Egyptians, nor any of the continuity of monuments which fix the years elapsed. It is almost entirely occupied with the Sothic cycle and its connexions. The latter part of the work concerns only the Graeco-Roman details of calendars.

The real question which is most serious in historical work is the duration of the interval between the XIIth and XVIIIth dynasties:—Could it be only 208 years, or else + 1,460 years of cycle = 1,668 years; or was there no cycle, and the calendar in confusion, and any period between these two to be adopted at personal choice? Such is the essential problem, and though there are plenty of writers who copy opinions there are very few who master the details in question. The most glaring mis-statements are often made about the plain facts.

To decide the matter Captain Weill first rules out the hazy theory of a change of calendar, showing that the five epagomenal days are named as early as the Vth dynasty, and the seasons of wars or quarrying follow a regularly shifting calendar of months. To decide between the long and short chronology the author relies on his theory of the artificial nature of the lengths of the dynasties. The XVth of 259 years being half of the XVIth of 518 years, the XVIIth of 151 years being a third of the XIIIth of 453 years. This is a neat theory, but will it work in a known case? We might as well say that 120 years of the XXIInd dynasty (952–832) is a duplicate of the XXVIIth dynasty 120 years, and half this was the XXVth or the XXVIIIth–XXXth dynasties, and five such intervals (302) make the interval from Alexander's to Augustus' conquest, or eight of 120 years for the Ptolemies and Romans in Egypt. Yet we know by external history that all this is casual coincidence, and so the case may as well be in the Hyksos age. The solid facts are never hinted at here, that the certainly consecutive kings of the first half of the XIIIth dynasty alone require 250 years, and the writers on the short chronology entirely suppress all mention of this block.

An attempt is made to get a ruling between the early and late dating by showing that on the continuous Julian calendar the seasonal dates in early times would not fit. But that ignores the adjustment of the Julian to the true Gregorian calendar by adopting Thoth instead of Mesore as the 1st month, and so getting over the change due to precession. There would be no complex working or theory required for this; only by the time that the nominal months did not fit the seasons, a shift of one month was adopted.

In the earlier period of the primitive dynasties, the attempt to reach fixed ground from the fragments of the early Annals is justly shown to be uncertain,

owing to the variation in the breadth of divisions in each of the lines, and the whole subject remains open to too many possible interpretations. It is an equation with some valuable factors, but too many unknown quantities to yield a real solution. The later third of the book deals with minute questions of a few days in the later periods of the calendar, interesting, but unimportant in the main questions. Much is debated about the exact day of Sothiac visibility varying by the latitude. But a larger variation is quite unnoticed, due to the greater distance of Sirius from the pole of earlier ages. Roughly speaking, at 4000 B.C., Sirius rose one-third farther from the sun than it does now. One minor matter seems strangely overlooked. The era of Menofres is stated at 1321 B.C., and those various wild conjectures of names with *nofer* are stated, and rejected as too remote in time. But in 1326, only five years difference, there was Men-peh-re, Ramessu I ruling, and as *p* usually becomes *f* in later place-names so this Menepehre would easily be rendered Menofres.

This book, though desirable for reference on some points, does not deal conclusively with any new factors on the greater problems, nor with any of the evidence for the beliefs of the Egyptians as to the duration of their history.

Ancient Cities of Iraq: A practical handbook. By DOROTHY MACKAY. 82 pp., with map, plans, and photographs. 1926. (Baghdad: K. Mackenzie.)

Mrs. Mackay's intimate knowledge of the Near East, especially of the lesser-known parts such as Mesopotamia, makes her eminently fitted to write a more ambitious work than this "practical handbook." But her authorship of it is a guarantee of its accuracy and interest. It is essentially a book for the tourist who wishes to see the chief sites, and in a compressed but readable form Mrs. Mackay gives the principal events in the history of each city. The account of the little city-state of Umma is a model of what such writing should be. As the book is intended for visitors, Mrs. Mackay has based the order of the cities on their position as regards the railway, the account of each city being practically complete in itself. The chronological table makes the overlapping dynasties of each state as clear as so confused a method of dating can ever be. The bibliography is uncritical, being merely a catalogue of books which can be obtained on the spot. With this one exception, there can be nothing but praise for this excellent little volume.

M. A. MURRAY.

JOURNALS.

A Study of the Badarian Crania. By B. N. STOESSIGER. 8vo. 42 pp., 7 pls. (*Biometrika*, XIX, July, 1927.)

This very detailed study deals with 60 Badarian skulls, brought by Mr. Brunton from the excavations for the British School. As the Badarians are the oldest occupants of Egypt who can be studied in sufficient numbers, and form the basis on which all later invaders have been superposed, their relation to other peoples is a fundamental matter. The upper Egyptians inherited their type, but with continually increasing divergence from it, as fresh stocks came in. They were not allied to the Abyssinians, nor to the Sardinians who resemble the later Egyptians. Nor was there any negro connection, unless very remote in the course of development. The primitive races of India are the most akin to the Badarian, namely, Dravidians, Veddahs, Hindus, and Nepalese. On placing the dimensions of their skulls and those of the early Egyptians together, the Badarians just fall between the two in almost every detail. The skulls are remarkably long, smooth, and feminine in character. The conclusion is that the Badarians and early Indians were branches from the same stock in Asia; but the period is so remote that we cannot hope to find the stock unchanged after the immense migrations that have occurred.

Quarterly Statement. Palestine Exploration Fund.

January, 1927.—This number contains several archaeological papers. Dr. Badé describes his excavation at Mizpeh, where the city wall is 16 feet thick, and his discovery of 2 cave tombs filled with burials of some 70 bodies with about 200 jars or bowls. The period is at the dawn of copper, 3000–2500 B.C. Such a collection gives a very important view of a brief period. Mr. Phythian-Adams has an excellent protest against the rejection of a whole document because we may see a view of some detail differing from that of the writer. The absurdities of the schools that make a principle of discrediting all early records are firmly rejected. Mr. Reifenberg discusses the date of the shekels struck at Jerusalem, accepting the Maccabaeon date rather than that of the First Revolt.

April, 1927.—ALAN ROWE. *The New Discoveries at Beth-Shan.* This exploration, carried on by an Australian scholar for the Philadelphia University, has recovered more Egyptian monuments than are known in any other site in Palestine. The whole of the top of the Tell of Beth-Shan has been removed over about two acres, and 37 feet down, reaching to the age of Amenhetep III. A larger depth of remains lies under this, which may give light on the earlier ages. In the Amenhetep level was found a temple of Ashtoreth; this had a front hall, entered on the south, with a bench along the sides and an altar at the north end. In the middle stood two palm columns to carry the roof. Behind the altar were steps leading to the upper altar-room, in which the altar

has a sloping top. Below the floors and walls were foundation deposits of Amenhetep III—amulets and rings. On the floor was a stele of Ashtoreth Karnaim, with the pair of horns below a helmet. Below the floor were nearly fifty Syro-Hittite cylinder seals, gold rosettes, glass vases, a lazuli scarab, gold pendants, and a bronze dagger with inlaid wood handle; also a magnificent Hittite battleaxe. By these was a basalt model of a chair of Cretan form, with a winged Set-animal carved on each side, and a spread vulture and *zed* on the back. With this was a small limestone altar, with squares painted on the top and sacred trees on the base.

Upon the ruins of this temple another was built by Sety I, but with foundation plaques of Ramessu I. Sety put up a stele recording his capture of the city, and another which seems to name the Apiru, but is badly weathered. In this temple was a gold statuette of a goddess, a flower-stand with figures of birds, a very large bowl with sixteen handles, a tray, a pottery box, a vase with heads of a lion and a bull, and an alabaster jar with two handles formed as heads of ibexes. Egyptian objects lying north of the temple, were a hippopotamus, part of pottery horse, and amulets. Also here was a mass of silver ingots and small jewellery, and a gold armlet, 43 oz. in all.

Above the temple of Sety were two temples of Ramessu. The southern one, planted on the Sety temple, had its entrance on the west; it was built by a general, Rameses-user-khepesh. The plan was a hall, with three columns on each side for the roof. At the foot of the columns were two deposits, one of gold and silver ingots and jewellery, about 90 oz.; another, silver ingots and jewellery, about 25 oz. At the sides the hall opened into stone chambers, where a serpentine cylinder was found, representing Rameses shooting two enemies bound to a standard, before Resheph. Many cult objects appear to be Cypriote or Aegean in origin, as models of shrines, cylindric stands with figures of serpents, doves, and deities. The northern temple was square, with four columns, and was dedicated to Ashtoreth, identified with Anaitis on a stele. A stele of Amen-em-apt here gives historic basis to the Amen-em-apt of the Anastasi papyrus of travels, who is there questioned about Beth-Shan.

The Egyptians continued to hold Beth-Shan till Rameses III. He then erected his statue, as triumphing over the Philistines and their allies. This continuous occupation comes down to 1191 B.C. It becomes, then, impossible to suppose that Egyptian domination in the heart of the land—in what was the territory of Issachar, with access through the land of other tribes—could have left no trace in Israelite history, no servitude, and no fighting. Clearly Israel cannot have been yet in occupation. Further, though Philistines had their temple of Dagon at Beth-Shan, and were in occupation of the central country some time after the Egyptians, there is no trace of them in the record of Joshua, except in their old region on the coast, where the five lords of the Philistines ruled, from the south border up to Ekron. This, again, makes it impossible to date the Israelite occupation until well after 1187. Joshua could not have reached Baal-Gad in the Lebanon without clashing with the occupants of Beth-Shan far south of it. Of the Philistine there is no trace, except in the southern coast region. Nor can this be explained away by supposing the record of Joshua to be a late and erroneous compilation, as a later writer would naturally reflect the celebrated Philistine occupation of Beth-Shan. On the contrary, this entire absence of the Philistine in Joshua's conquests is strong evidence of the record being almost contemporary.

The Philistines appear to have placed their worship of Dagon in the temple of Resaph, and kept on the Ashtoreth worship. But there was no rebuilding here till about the 3rd century B.C., when a large stone temple was erected, 72 feet wide and 121 feet long. A large cemetery below the mound, across the Jalud river, was mostly of later period, but began in the Bronze Age. There are many burials of the XVIIIth and XIXth dynasties, in the pottery coffins then usual in the Delta. The objects with these were Egyptian statuettes of gods, ushabtis, false-necked vases, and pilgrim bottles. These show how fully the Egyptian settlement brought in the western connections, as seen at Tell Yahudiyeh.

Further discoveries have reached the Canaanite level, where two temples have been found, with a fine lazuli scarab of Senusert I, and a figure of a god in gilded bronze, probably Hadad.

Annals of Archaeology and Anthropology. XIV, 1-2, March, 1927.

The Egyptian interest is a short paper, with 39 plates, by Robert Mond and Walter Emery, on work at Thebes in 1925. Twelve tombs were cleared or repaired—those of Rames A, Paheqmen, Nekhtamen, Tehutmes, Amenhetep, Userhet, Anena, Rames B, Khonsu, Min-nekht, Neferhetep and Tehutisenb. The tomb of Rames A was the heaviest clearance, needing to move 50 feet depth of rubbish. Walls were rebuilt where destroyed, and the pieces of fallen sculpture replaced amid new blocks of limestone. Fragments of columns have enabled the reconstruction to be correctly made, to replace a dozen which supported the roof. From these tombs there was the usual Theban output of cones and late pottery, but nothing is published of fresh importance. The plates include good plans, photographs of various stages of clearance with large gangs of over a hundred workers, a dozen photographs of a fine tomb of Paheqmen, which was discovered, and of which Mr. Mond promises a detailed publication. It is sad to think of work, so self-denying and costly, being badgered by officialism without a show of gratitude. Mr. Mond has now said that he withdraws from the field, where he has done more than anyone for preservation and public benefit.

Bulletin of the Metropolitan Museum of Art. New York. December, 1926.

N. DE G. DAVIES.—*The Egyptian Expedition, 1925-26.* This records the work of copying the Theban tombs, which was continued, although excavation was stopped owing to the arbitrary regulations. Several important scenes and figures are here illustrated, in particular a group of statues of Tehutmes III and queen, with a female sphinx which Mr. Davies suggests is the well-known sphinx of queen Hatshepsut I, now in the Barraco collection, and formerly transported to the temple of Isis in Rome. A long piece of border of very naturalistic plants was copied at Amarna, of which a sample is given here, and a Theban scene of a barber trimming up recruits.

Bulletin of the Museum of Fine Arts. Boston. 30 cents.

May, 1927.—This number gives a full account with 22 photographs, of the discovery of the tomb of Hetep-heres, mother of Khufu, by Dr. Reisner. This most important tomb has been so fully illustrated in various reports in different newspapers that it is needless to describe it here. The discovery was made by Mr. Rowe in February, 1925, during the absence of Dr. Reisner in America,

and within a month he had cleared out the stone-packing of the shaft more than 80 feet deep. On seeing the interment in the chamber, the place was effectively closed until Dr. Reisner arrived, and the final opening was in January, 1926; not till May, 1927, was the last object—the canopic box—examined. There has never been a chamber which required, and received, such detailed care for the recovery of its contents. In the tomb of Tutankhamen the woodwork was at least in firm condition; here it was so completely rotted by damp that it could not be moved except in fragments. The minute gold inlays had to be planned in position before lifting a piece with jeweller's pincers; layer under layer of rotted wood had to be detached, and the work was done in a small rock-chamber, where the workers must lie on the floor, and move inch by inch to get ground. The heat, and chills above ground, killed the native foreman with pneumonia, but happily Dr. Reisner, Mr. Dunham, and Lieut.-Commander Wheeler (formerly our comrade at Qau) have been able to finish the work in good health.

The framework of gold-cased poles must have been a catafalque like that figured in some early tombs. This is being reconstructed on new wood by Dr. Reisner, and a copy made of it for the Boston Museum. The most interesting of the objects, as new to us, are the ten silver anklets with four inlaid figures of dragon-flies on each, alternating with discs of carnelian. The flies are inlaid with turquoise and lazuli, and the tail-joint with carnelian. They lay in what was marked as "Box containing *deben* rings." This fixes the primary meaning of *deben* as an anklet, agreeing with the fact that in the XVIIIth dynasty the anklets weigh a *deben* weight. As *deben* and *qed* both refer to going around, we might suppose that the *qedet* weight was the ring that went round the finger, and that the Egyptian began by defining weights as anklets and finger rings.

The empty sarcophagus was opened in March, and, though the viscera were later found in the canopic box, there is no trace of the body or skeleton. This is hardly accounted for by supposing that it was broken up by thieves in the original burial at Dahshur. Bodies of that age were swathed in great masses of wrapping, as the arm of the Queen of Zer, and the body of Ra-nefer at Meydum. If there were even fragments of the body left—or none at all—there was nothing to prevent the undertakers from wrapping up a mass of linen to represent it. We know that the great lady Atet at Meydum was reduced to chips by the workmen who closed her sepulchre. Such could have been made up decently in wrappings, had there been a re-burial. Is it possible that for extra security the body was laid in some unknown place at Dahshur, and the burial had always been a show and no more? Whenever Dahshur is allowed to be examined thoroughly, there should be an inch-by-inch search of the rock all around the original place of the sarcophagus.

October, 1927.—This number contains 14 pp. with 21 figs. of the tomb of queen Meresonkh III, described by Dr. Reisner. She was the daughter of Ka-uab, the eldest son of Khufu, and Hetep-heres II, daughter of Khufu. Hetep-heres II is pictured with short hair of bright yellow colour with fine red lines. Beside her marriage to Ka-uab, she was queen by marriage with Razedef, or perhaps Khofra, and she also married a great noble, Onkh-ha-ef. Finally she was buried in a mastaba of her own, beneath part of which is the tomb of Meresonkh. The son of Hetep-heres II and Razedef was "king's son, of his body, Nebemakhet," another was Du-uanera, and a sister was Shepseset-kau. Dr. Reisner adds an important list of the relationships from Huni to Ne-user-ra, but as space does not allow of stating all this evidence, this must rest on his own conclusions.

Académie des Inscriptions. Comptes Rendus.

November-December, 1926.—This contains the annual report of M. Lacau. The work at Saqqareh has been already described and illustrated in English papers. [The later work of opening a great untouched tomb has also been mentioned; it contains large panels of scenes of Imhetep and of Zeser, of the finest low-relief, and inlays of blue-glaze tiles, thus far surpassing the much damaged chambers of the Step Pyramid.] The Mastabet el Faraun has been entirely cleared, and the pyramid of the Queen of Pepy II. This contained very fine diorite vases, and the chamber was engraved with the pyramid texts. At Karnak, after five years of work, M. Pillet has left, and his place is taken by M. Chevrier. The insecurity of the hall of columns has led to building a grid of cross-walls of foundation to support the columns. When cutting the drain for this work two colossi of Akhenaten were found, and eight others in line with them. They were placed against pillars, as in the courts of other temples; being thrown face down, in order to quarry away the stone pillars for later building, the statues have been perfectly preserved. They are the most ghastly caricatures of the "heretic king" that Theban sculptors dared to produce.

January-March, 1927.—Two scarabs found at Byblos half a century ago, now in the Clercq collection, probably came from the Tomb IV which had been opened about that time. They are of amethyst and had been mounted in gold rings. One reads, "The noble prince, son of Amipi, Mzr-debt-atf, great of rule, excellent of ka." The other, "The lady Sat-user *neb amakh*." A fragment of alabaster vase recently found in Tomb IV accords with part of this name. As the name "he who presses his father's sandals" is purely Egyptian, and the names of his father and his wife also, it seems that Egypt was in occupation of Byblos entirely, in some part of the XIIth dynasty.

Further work at Byblos is reported. Foundation deposits have been found—120 small bronze figures, and a fine statuette in serpentine with dedication to Hathor. Many fragments of hieroglyphic inscriptions have been found, and thick, rough walling (which was doubtless plastered) at a greater depth, belonging to Old Kingdom times. The whole site sadly needs systematic work and record.

April-June.—F. W. KELSEY.—*Fouilles Américaines à Kom Ousim*. This general account by the late Professor Kelsey describes the regular work in dated levels of the 4th, 3rd, and 2nd centuries A.D., the dating by papyri and by coins, the woven stuffs, pottery, and woodwork, beside much glass. Whether Professor Kelsey's excellent intentions of scientific publication of such series will be carried out, will be a test-case for American efficiency. Hitherto their work has enriched their museums, but done very little for scientific record and study. Here, work was well started and material recorded; but can it be carried to its intended conclusion?

Séance du 13 Mai.—At Mishrifé, near Homs, supposed to be the ancient Qatna, a small sphinx has been found, dedicated by a royal daughter, Ata, presumably the daughter of Amenemhat II. Tablets found at Mishrifé give an inventory of the treasure of Nin-Egal, lady of Qatna. (*Séance, 20 Mai.*)

Bulletin Institut Français d'Archéologie Orientale. XXVII, 1.

This opens with various small papyri, among which the main items are interest on a loan, 1 per cent. per month, in A.D. 221, and a sow worth 100 drachmae

in A.D. 186. The important article is a notice of Egyptian antiquities in the Museum of Buda-Pest, by Dr. Mahler (in English). The monuments described are four: (1) Stele of an inspector (*rud*) Sehetep-ab under Amenemhat III, with his wife Arnekena, parents Senb and Hent, and children Senb, Abt-ab, Paty, Neb-ay-pu, and Ptah . . .; also other relatives, Senhen, Hent, Afen, Beby, and Kagemi. (2) Pottery stele of Ameny, scribe of sculpturing (*qedet*), born of Sätpepy, with his parents Nekht and Rehuonkh, brothers Ameny and Okhem-hetep, and children, Senb and Mennut. Further, his wife Uazet, children Nefersenb, Pepy, Pepyt-aft and Onkhut; also relatives Kayt, Ptah-nekht and Amen-nekht. (3) Stele of Her-mes, keeper of the house of offerings, with wife Sat-ty, wife Uazët-renpet, sons Să-pă-ar, Kho-em-uas; the goldsmith of Amen Huy and his wife Amen-em-apt; also Aret, Nefertari, Tyut, Baka, and the *qosh* of Amen, Tehuti. (4) Stele of adoration of Osiris, desiring that offerings be made for Osiris and for the benefit of the adorer, whose name is not given. A blank at the end points to this being a stock piece cut in the trade, and kept ready, the offerer's name not having been added.

Chronique d'Égypte. July, 1927. 8vo. 147 pp. (Musées Royaux du Cinquante-naire, Bruxelles.)

This organ of Dr. Capart's society, the *Fondation Égyptologique*, gives a record of various work which does not otherwise appear. At Hou (Diospolis Parva) a small amount of clearance has been made on the temple site, baring the lowest course of Roman building, and—behind that—the entrance to catacombs, with a great number of its burials in jars. These are almost destroyed by the rise of water-level and by ancient pillagers. The real importance of this site will appear when the temple area is dug out below water-level and early sculptures are recovered. An account of the tomb of Petosiris is given, with illustrations. A useful method of republishing objects of importance, now lost to sight, is begun by Dr. Capart, in order to recover their destination; also portions of scenes are illustrated in hopes of hearing of the remainder. The Mitrahineh fragment of Sir Charles Nicholson is probably, with his other antiquities, in the Museum of Sydney, N.S.W.

Tropical Life. November, 1927.

In this number a very important account is given of Professor Schwarz's conclusion, respecting the prospects of the Nile. He points out that the Victoria Nyanza which is the source of the White Nile, is only held up from spilling down the Congo by a narrow sill of mountainous country. In this retaining-wall a crack has appeared, which has been leaking badly. Should an earthquake increase this, nothing could save the water from running into Tanganyika and on to the Congo. Such a change has happened, about five hundred years ago, when a barrier ridge of basalt was fissured by earthquake which let the Kalahari lakes run over Victoria Falls down the Zambesi, and so made the Kalahari desert. If an earthquake were to let the Nile sources take another course, the Blue Nile of Abyssinia would not support half of the present Egyptians, and an immediate migration would be necessary to avoid famine. The Egyptian Government has sent an expedition to examine the south-west corner of the great lakes and study the conditions. The work of Professor Schwarz on the Kalahari desert and its cause was reviewed in this journal in 1922, p. 27.

NOTES AND NEWS.

A LITTLE bronze plaque, now in University College, shows us here a form of Bes which does not seem to have been published hitherto. He appears as a seated sphinx, with long curved wings. The duplication of the figure, facing toward a central pillar, is in the Mykenaeen tradition; the figure of Bes was very popular in the imitations of Egyptian style, and the large curved wings are usual on the archaic Phoenicio-Greek art. The plaque is, therefore, of about the viiiith century B.C. It is cast, probably, from a *cire perdue* model.



The British School is continuing its work on Egypt over the border. The large mound Tell Fara, nine miles south of Gerar, is the new field, certainly of the Bronze Age; it exhibits remains of buildings, shown plainly in the trenches dug during the war. There is a good prospect of again linking with Egyptian history, and continuing the systematic dating of levels which we had in Gerar.

As a preliminary, Mr. Starkey went east of Jerusalem to track down the source of flints said to come from there. He has now found that these flints were brought from Egypt by a dealer, who gave a fictitious value to them by a false statement of their belonging to the Jordan valley. Meanwhile Mr. Harding, Lieut. and Mrs. Risdon, Miss Broome, and Miss Tufnell were all living in our old quarters of the tomb of Uahka, at Qau, and copying the IVth dynasty tomb a little north of that. English work is dead in excavation now under the new regulations of Egypt, only some wall-copying going on at Abydos.

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The following alphabetical examples of each title are given for reference to the numbers of the classified lists already published in this Journal, 1924-6, as collected in the contents above. The key word is also given here at the side, as briefly as may be for quick reference, without the details stated in the articles, which may be needful to explain it.

The examples are selected to give the spelling and its variants, also to show the scope of the title, but contiguous examples in the articles are not quoted needlessly. This list gives an opportunity in some cases of a cross-sorting by the name of the title and not by its application to trade. In some cases only the determinative of an office is used, instead of the name of the office or object. The double forms of *kh* and of *s* are put together, as often they are interchanged; there is also frequent change of spelling between *ā* and *a*, and even *o*, so it is well to look under more than one head.

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<i>da ans</i> , red linen	1375	757	<i>ou</i> , documents
<i>ari</i> , keeper	1445	1743	<i>omu</i> , washing
" "	1817	1360	<i>o</i> , tunic (?)
<i>ar</i> , keeper [things]	1741	93	<i>ot</i> , office
<i>ar kht</i> , keeper of	459	1080	<i>oāu</i> , wardens
keeper of gate	77	1014	<i>hrtpōd</i> , ruler
<i>arp</i> , wine	1285	73	gates, commander
jars of wine	1283	98	of audience hall
vats of wine	1284	870	gate, commander
press for wine	1282	1806	gate of S. and N.
vine dressers	484	1386	<i>oā</i> , dragoman
<i>ahu</i> , stables	108	1056	<i>oā</i> , warden of orders
" "	934	1306	<i>oāuti</i> , warden
" "	1305	1476	<i>oā</i> , ass
<i>ahmo</i> , replies	591	586	<i>oot</i> , holy bark
<i>ahms</i> , servant	1166	1567	<i>ou</i> , documents
<i>hqu</i> , servant of beer	1331	1289	<i>ou</i> , fisher
<i>tkhu</i> , servant of drink	1332	422	<i>ob</i> , horn; <i>uhm</i> , hoof
<i>kap</i> , servant of nursery	1821	866	<i>obu</i> , checkers
<i>dgru</i> , servant of records	762	1355	<i>obu</i> , Elephantine
<i>ah</i> , stable	1441	212	<i>opru</i> , uniforms
" "	1275	239	royal uniform
<i>akhi</i> , glorious	520	1534	uniform of guard
<i>as</i> , register	739	1334	navy
of food	1309	1798	<i>opti</i> , brewer
king's men	547	1600	<i>oāmt</i> , Asiatics
of all things	361	1801	" "
of favourites	137	260	great lord of Asiatics
building (tomb)	755	1882	<i>on</i> , writing-tablet
excellent chief	892	1060	<i>onkh nauti</i> , citizen
" scribe	809	1835	<i>onkh</i> , household
<i>anb</i> , building	1631	380	<i>onkh</i> , ear of king
<i>aqdnu</i> , carvers	541	1349	<i>onkh</i> , ears
<i>ak</i> , O! thou	324	1348	ear of the chief
<i>aku</i> , mason	1639	679	" "
<i>akm</i> , black land	1099	1867	<i>orryt</i> } nome
black bull	1025	678	<i>oryti</i> } record
black jar	1918	66	<i>ruryt</i> } office
<i>atu</i> , Asiatics	1793	992	<i>oh</i> , palace gate
<i>atpa</i> , sacred boat	1475	1158	<i>oht</i> , plough land
<i>aten</i> , temple of	700	1403	<i>ohuti</i> , ploughmen
<i>aty</i> , prince of S. & N.	850	1912	<i>oha</i> , fighter
nome	1050	1478	" "
<i>adb</i> , high pasture	1216	1589	<i>oho</i> , Nile boat
<i>adn</i> , hearer	1847	490	<i>hmt oho</i> , high art
" "	1846	491	<i>okhy</i> , brazier
<i>yauu</i> , declarations	758	80	<i>okhu</i> , cooks
<i>o</i> , writings	625	689	<i>okhmut</i> , diwan
" "	897	1343	<i>osh</i> , pleadings
" of increase	816		<i>oq</i> , food

<i>oqt</i> , mastaba	997 𓂏𓂏𓂏	1744 𓂏𓂏𓂏	<i>udi</i> , inspector
<i>ot</i> , office, of gifts	467 𓂏𓂏𓂏	1535 𓂏𓂏𓂏	<i>uuu</i> , inspectors
foreign	1803 𓂏𓂏𓂏	1583 𓂏𓂏𓂏	" "
of palace	94 𓂏𓂏𓂏	1757 𓂏𓂏𓂏	" "
<i>otekh</i> , brewery	1330 𓂏𓂏𓂏	1566 𓂏𓂏𓂏	" " of boats
<i>ozmr</i> } conservator	1087 𓂏𓂏𓂏	1570 𓂏𓂏𓂏	<i>uu</i> , royal
" } of	1088 𓂏𓂏𓂏	1569 𓂏𓂏𓂏	<i>uit</i> ,
" } canals	1089 " 𓂏𓂏	1575 𓂏𓂏𓂏	<i>ubu</i> , artizan
of desert edge	1090 " 𓂏𓂏	1594 𓂏𓂏𓂏	of temple
of palace	1097 𓂏𓂏𓂏	1863 𓂏𓂏𓂏	<i>upt</i> , royal progress
of Buto	1098 𓂏𓂏𓂏	394 𓂏𓂏𓂏	<i>upu</i> , orderly
<i>ozt</i> , fat land	1194 𓂏𓂏𓂏	720 𓂏𓂏𓂏	<i>upt</i> , declaration
<i>oztu</i> , men of land	1338 𓂏𓂏𓂏	1401 𓂏𓂏𓂏	<i>uptu</i> , court orders
<i>ozāu</i> , prospector	1658 𓂏𓂏𓂏	839 𓂏𓂏𓂏	<i>upt</i> , general order
<i>oz hq</i> , Heliopolis	1108 𓂏𓂏𓂏	731 𓂏𓂏𓂏	secret orders
<i>oz kau</i> , butcher	1337 𓂏𓂏𓂏	1840 𓂏𓂏𓂏	" "
<i>u</i> } open	1261 𓂏𓂏𓂏	708 𓂏𓂏𓂏	declaring affairs
" } fields	1185 𓂏𓂏𓂏	580 𓂏𓂏𓂏	scribe of orders
" } cultivated	560 𓂏𓂏𓂏	1872 𓂏𓂏𓂏	<i>upt re</i> , orderer
<i>uan</i> , sub-officer	1421 𓂏𓂏𓂏	729 𓂏𓂏𓂏	declaring orders
<i>uanat</i> , Nubia	1792 𓂏𓂏𓂏	725 𓂏𓂏𓂏	in nomes
<i>uatu</i> , roads	1890 𓂏𓂏𓂏	25 𓂏𓂏𓂏	New Year's king
<i>her uat</i> , over roads	1766 𓂏𓂏𓂏	1553 𓂏𓂏𓂏	<i>unnut</i> , hours
<i>uaz ur</i> , great sea	1758 𓂏𓂏𓂏	901 𓂏𓂏𓂏	<i>ur uru</i> } great
<i>uou</i> , sub-officer	1895 𓂏𓂏𓂏	900 𓂏𓂏𓂏	" } mayor
<i>uouu</i> "	1518 𓂏𓂏𓂏	852 𓂏𓂏𓂏	<i>uru</i> , mayors
<i>uo</i> , peer	887 𓂏𓂏𓂏	642 𓂏𓂏𓂏	<i>ur ht</i> } great house
of great lake	888 𓂏𓂏𓂏	921 𓂏𓂏𓂏	" } of six <i>saru</i>
over group	894 𓂏𓂏𓂏	639 𓂏𓂏𓂏	<i>uryt</i> , the six <i>saru</i>
<i>ur uo</i> , mayor, peer	658 𓂏𓂏𓂏	632 𓂏𓂏𓂏	judge in <i>urt</i> court
<i>uo ou</i> (?)	896 𓂏𓂏𓂏	1928 𓂏𓂏𓂏	<i>urt</i>
<i>uot</i> , office	895 𓂏𓂏𓂏	1454 𓂏𓂏𓂏	<i>urrt</i> , chariot [maker
<i>uo mnkh</i> , capable	893 𓂏𓂏𓂏	1710 𓂏𓂏𓂏	<i>urru</i> , chariot-
<i>uob</i> } washing	149 𓂏𓂏𓂏	1552 𓂏𓂏𓂏	<i>urshu</i> , time-keeper
" } king's hands	157 𓂏𓂏𓂏	1659 𓂏𓂏𓂏	<i>uha</i> , collector
" } washing	152 𓂏𓂏𓂏	392 𓂏𓂏𓂏	<i>uhmu</i> , legate
" } king's mouth	156 𓂏𓂏𓂏	391 𓂏𓂏𓂏	satisfying
lavatory of king	160 𓂏𓂏𓂏	388 𓂏𓂏𓂏	in all lands
<i>uob oo</i> , hand-washing	498 𓂏𓂏𓂏	1125 𓂏𓂏𓂏	warden of happi-
<i>uobut</i> , washers	1742 𓂏𓂏𓂏	384 𓂏𓂏𓂏	of king [ness
<i>uortu</i> , messenger	289 𓂏𓂏𓂏	1538 𓂏𓂏𓂏	<i>ukhr</i> , watching
of ten <i>suru</i>	665 𓂏𓂏𓂏	1544 𓂏𓂏𓂏	" "
of ships	1536 𓂏𓂏𓂏	1545 𓂏𓂏𓂏	" "
of Nile	407 𓂏𓂏𓂏	948 𓂏𓂏𓂏	" "
warden of city	1114 𓂏𓂏𓂏	60 𓂏𓂏𓂏	<i>uskht</i> , forecourts
diwan of <i>uortu</i>	1858 𓂏𓂏𓂏	686 𓂏𓂏𓂏	hearer in forecourts
seal of messenger	868 𓂏𓂏𓂏	1707 𓂏𓂏𓂏	<i>ust</i> , sewing
foreign messenger	404 𓂏𓂏𓂏	1636 𓂏𓂏𓂏	<i>usho</i> , quarrier
<i>uortu</i> , of chief's table	409 𓂏𓂏𓂏	217 𓂏𓂏𓂏	<i>uthst</i> , queen's watch
of chief's food	408 𓂏𓂏𓂏	328 𓂏𓂏𓂏	<i>udn</i> , offerer

<i>uzd</i> , health office	286	ᠠᠭᠤᠨᠵᠢᠳᠤ	1804	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>pt</i> , heaven
" "	546	ᠠᠭᠤᠨᠵᠢᠳᠤ	1260	ᠠᠭᠤᠨᠵᠢᠳᠤ	" "
<i>uzo</i> , dividing words	610	ᠠᠭᠤᠨᠵᠢᠳᠤ	214	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>pat</i> , bow bearer
<i>uzb</i> , land deeds	728	ᠠᠭᠤᠨᠵᠢᠳᠤ	1356	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>fdu</i> , four
<i>uzhu</i> , food table	494	ᠠᠭᠤᠨᠵᠢᠳᠤ	593	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mādt</i> , seeing
of wine office	1351	ᠠᠭᠤᠨᠵᠢᠳᠤ	31	ᠠᠭᠤᠨᠵᠢᠳᠤ	" "
scribe	438	ᠠᠭᠤᠨᠵᠢᠳᠤ	1389	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>māot-men re</i> , Sety I
"	1346	ᠠᠭᠤᠨᠵᠢᠳᠤ	957	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>māot</i> , justice
<i>bāadt</i> , quarry	543	ᠠᠭᠤᠨᠵᠢᠳᠤ	682	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>ht</i> , court of justice
" "	1767	ᠠᠭᠤᠨᠵᠢᠳᠤ	1197	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mat</i> , bows (?)
<i>ba</i> , ram	1303	ᠠᠭᠤᠨᠵᠢᠳᠤ	1442	ᠠᠭᠤᠨᠵᠢᠳᠤ	" "
<i>baāt</i> , bread	1318	ᠠᠭᠤᠨᠵᠢᠳᠤ	986	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mahz</i> , gazelle
<i>bau</i> , royal spirits	1924	ᠠᠭᠤᠨᠵᠢᠳᠤ	1051	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>maot</i> (?)
<i>bau zed</i>	1925	ᠠᠭᠤᠨᠵᠢᠳᠤ	1935	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>marsht</i>
<i>bau zedui</i>	1926	ᠠᠭᠤᠨᠵᠢᠳᠤ	1112	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>maqds</i>
<i>banrati</i> , conserve	1720	ᠠᠭᠤᠨᠵᠢᠳᠤ	1161	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>matru</i>
<i>banra</i> , dates	1321	ᠠᠭᠤᠨᠵᠢᠳᠤ	1932	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>matr ta</i>
<i>bak</i> , servant	501	ᠠᠭᠤᠨᠵᠢᠳᠤ	1931	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>matrt</i>
<i>baku</i> , price	1547	ᠠᠭᠤᠨᠵᠢᠳᠤ	1054	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>ma mo</i>
<i>bat</i> , shans, loaves	1316	ᠠᠭᠤᠨᠵᠢᠳᠤ	821	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mabti</i> , carpenter
<i>bat</i> , bread	1716	ᠠᠭᠤᠨᠵᠢᠳᠤ	1700	ᠠᠭᠤᠨᠵᠢᠳᠤ	" "
<i>bat</i> , royal	1035	ᠠᠭᠤᠨᠵᠢᠳᠤ	1698	ᠠᠭᠤᠨᠵᠢᠳᠤ	" "
<i>batdu</i> , royal things	844	ᠠᠭᠤᠨᠵᠢᠳᠤ	249	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mabti</i> , royal
<i>batu</i> , royal towns	982	ᠠᠭᠤᠨᠵᠢᠳᠤ	1703	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mabti</i> , ship-builder
<i>bashā</i> , graving	1634	ᠠᠭᠤᠨᠵᠢᠳᠤ	243	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mabti se ams</i>
<i>bou</i> , light	265	ᠠᠭᠤᠨᠵᠢᠳᠤ	1701	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mabti</i> of carving
<i>bobo</i> , refiners	1695	ᠠᠭᠤᠨᠵᠢᠳᠤ	1633	ᠠᠭᠤᠨᠵᠢᠳᠤ	" "
<i>bu maot</i> , law court	681	ᠠᠭᠤᠨᠵᠢᠳᠤ	247	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mbati</i> , skinner (?)
<i>bnt</i> , harp	326	ᠠᠭᠤᠨᠵᠢᠳᠤ	648	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mobā</i> , thirty saru
<i>bsnta</i> , engraver	1696	ᠠᠭᠤᠨᠵᠢᠳᠤ	696	ᠠᠭᠤᠨᠵᠢᠳᠤ	mayor of S. 30
<i>bq</i> , workman	1603	ᠠᠭᠤᠨᠵᠢᠳᠤ	667	ᠠᠭᠤᠨᠵᠢᠳᠤ	S. and N. tens
<i>pe</i> , base of throne	191	ᠠᠭᠤᠨᠵᠢᠳᠤ	1796	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mo</i> , see 1795
<i>pat</i> , mass of people	1159	ᠠᠭᠤᠨᠵᠢᠳᠤ	1753	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mohāni</i> , milkman
" " "	1948	ᠠᠭᠤᠨᠵᠢᠳᠤ	1459	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mohāiry</i> , brave
<i>ppy</i> , Pepy	988	ᠠᠭᠤᠨᠵᠢᠳᠤ	1329	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mohrt</i> , drink
<i>pr</i> , temple	1044	ᠠᠭᠤᠨᠵᠢᠳᠤ	1466	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mokhen</i> , tenting
palace	47	ᠠᠭᠤᠨᠵᠢᠳᠤ	819	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mokhu</i> , balance
miner's hut	1650	ᠠᠭᠤᠨᠵᠢᠳᠤ	1752	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mosbui</i> , transport
<i>pr onkh</i> , census	117	ᠠᠭᠤᠨᠵᠢᠳᠤ	1795	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>moshuash</i> , Libyans
<i>pr as</i> , registry	1559	ᠠᠭᠤᠨᠵᠢᠳᠤ	1118	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mothn</i> , roads
<i>pr oa</i> , palace	145	ᠠᠭᠤᠨᠵᠢᠳᠤ	1786	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mozdyu</i> , police
<i>pr ur</i> , palace	84	ᠠᠭᠤᠨᠵᠢᠳᠤ	1740	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mozdir</i> , garland
<i>pr ur</i> , palace of queen	43	ᠠᠭᠤᠨᠵᠢᠳᠤ	1259	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mu</i> , inundation
<i>pr hm</i> , servants' hall	439	ᠠᠭᠤᠨᠵᠢᠳᠤ	216	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mut</i> , mother
<i>pr hz</i> , treasury	771	ᠠᠭᠤᠨᠵᠢᠳᠤ	1746	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mnot</i> , nurse
<i>pr hz</i> , treasury accounts	802	ᠠᠭᠤᠨᠵᠢᠳᠤ	1908	ᠠᠭᠤᠨᠵᠢᠳᠤ	familiar
<i>pehu</i> , low lands	1198	ᠠᠭᠤᠨᠵᠢᠳᠤ	1049	ᠠᠭᠤᠨᠵᠢᠳᠤ	Khufu (place)
<i>ps</i> , cooking	488	ᠠᠭᠤᠨᠵᠢᠳᠤ	1751	ᠠᠭᠤᠨᠵᠢᠳᠤ	of Uazmes
(?) store	492	ᠠᠭᠤᠨᠵᠢᠳᠤ	1910	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>tf meni</i> , tutor
<i>psshti</i>	1737	ᠠᠭᠤᠨᠵᠢᠳᠤ	515	ᠠᠭᠤᠨᠵᠢᠳᠤ	<i>mnnu</i> , monuments

monuments of Uauat	1457	monument	1266	pupil of garden
man of monuments	1640	man	1617	of engravers
<i>mnfat</i> , army	1391	army	59	<i>ms nsut</i> } royal
<i>mnfyt</i> , army [king	898	king	1815	" } children
<i>mnf Her</i> , army of	1394	army	1797	son of Libyans
<i>mn nfr</i> , Memphis	1109	Memphis	1656	<i>ms oati</i> , prospector
<i>mnhytu</i> , recruits	1399	recruits	1110	<i>emseh</i> , crocodile
<i>mnkh</i> , excellent	528	excellent	1155	<i>ms tht</i> , child porters
<i>mnkht</i> , clothing	1363	clothing	1785	<i>mszau</i> , police
" "	1148		1380	<i>msho</i> , soldier
of recruits	1361		1388	of nome
<i>mnsh</i> , sea ship	396	sea ship	815	<i>mt</i> , manager
" "	1902		1734	<i>m thhs</i> , leatherman
<i>mnti</i> , Sinaites	1447	Sinaites	363	<i>mdt</i> , words
<i>meh</i> , north ten	668	north ten	597	<i>mdu</i> , secret words
northern town	875	northern town	1599	<i>mz</i> , ten
<i>mht</i> , uraeus	178	uraeus	1577	ten artizans
<i>mh ab</i> , satisfying	704	satisfying	179	<i>mzh</i> , fillet
<i>m rau</i> , intendants	1850	intendants	1209	<i>mzd</i> , winepress
" "	1849		1045	<i>naut</i> , town
<i>mr</i> , canal	979	canal	1058	<i>nautu</i> , towns
" "	1241		996	<i>nautu ma</i> , new towns
of cattle	1299	cattle	1106	<i>nautu neb</i> , all towns
<i>mrut</i> , tenants	1729	tenants	1115	scribe of town
of Amen	1137	of Amen	1163	citizen
<i>mr</i> , of gravers	1132	of gravers	1940	<i>nu</i> , hunters
<i>mryna</i> , our lord	1465	our lord	1057	" " [king
<i>mryt</i> , harbour	1231	harbour	415	<i>nu nsut</i> , hunters of
<i>mrt</i> , tenants	956	tenants	1828	<i>nb nbu</i> , all (?)
<i>mrhrt</i> , ointment	1352	ointment	1763	<i>stu nt</i> , gold mines
" "	142		1863	gold, Nubian
<i>mrsonkh</i> , queen	983	queen	1903	washed (?) gold
<i>mru</i> , tenants	1135	tenants	1904	" "
<i>mru</i> , "	1131		775	Treasury of gold
<i>mrt</i> , tenants' towns	829	tenants' towns	774	of silver, gold
<i>mrti</i> , eyes of king	376	eyes of king	782	gold strong-room
eyes and ears of king	379	eyes and ears of king	530	chamber of gold
<i>mrti</i> , reporters	378	reporters	40	gold of queen
foreign agents	1799	foreign agents	1664	gold worker
scribe of reports	381	scribe of reports	1668	" "
<i>ammerti</i> , pilot	1527	pilot	1672	" "
intendant of N.	874	intendant of N.	1665	" "
<i>mkhut</i> , Nile basin	1251	Nile basin	1673	servant of gold
<i>mkht</i> , pupils	1824	pupils	1257	<i>nt</i> , swim, high Nile
of palace	1825	of palace	1708	<i>npr</i> , adzing
watching gate	71	watching gate	1046	<i>nfu</i> , wind [toilet (?)
of art	1592	of art	1816	<i>nfr hat</i> , king's
of bailiffs	1227	of bailiffs	1382	<i>nfru</i> , army recruits
of Treasury	794	of Treasury	1431	known to palace
of diwan	1167	of diwan	1378	<i>nfr shsu</i> , linen

<i>nfrtu</i> , heifers	1298	𐎎𐎠𐎢𐎵	1711	𐎎𐎠𐎢𐎵	<i>rtkh</i> , baker
<i>nfrtsh</i> (?)	1921	𐎎𐎠𐎢𐎵	1712	𐎎𐎠𐎢𐎵	<i>rteh</i> , baker
<i>nmhy</i> , poor	1169	𐎎𐎠𐎢𐎵	1618	𐎎𐎠𐎢𐎵	<i>rthu</i> = <i>remtu</i>
<i>nnu</i> , dog-ward	1557	𐎎𐎠𐎢𐎵	1157	𐎎𐎠𐎢𐎵	" } cultivators " } (rank " } with " } sculptors)
<i>nnuf</i> , unequalled	305	𐎎𐎠𐎢𐎵	1193	𐎎𐎠𐎢𐎵	
uncultivated	1262	𐎎𐎠𐎢𐎵	1156	𐎎𐎠𐎢𐎵	
unknown, unasked	1176	𐎎𐎠𐎢𐎵	𐎎𐎠𐎢𐎵	𐎎𐎠𐎢𐎵	<i>rkht</i> , known to king
unknown by them	1177	𐎎𐎠𐎢𐎵	307	𐎎𐎠𐎢𐎵	to palace
unknown, unsettled	1178	𐎎𐎠𐎢𐎵	308	𐎎𐎠𐎢𐎵	expert knowledge
<i>nnu</i> , hunters	1560	𐎎𐎠𐎢𐎵	812	𐎎𐎠𐎢𐎵	knowing Treasury
" "	1417	𐎎𐎠𐎢𐎵	795	𐎎𐎠𐎢𐎵	known well
<i>neheh</i> , eternal	526	𐎎𐎠𐎢𐎵	1584	𐎎𐎠𐎢𐎵	helping <i>rekhyt</i>
<i>nhsyu</i> , negroes	1463	𐎎𐎠𐎢𐎵	1121	𐎎𐎠𐎢𐎵	making live <i>rekhyt</i>
<i>nekh</i> , guard	89	𐎎𐎠𐎢𐎵	1125	𐎎𐎠𐎢𐎵	ruler of <i>rekhyt</i>
<i>nkhh</i> , El Kab	880	𐎎𐎠𐎢𐎵	1127	𐎎𐎠𐎢𐎵	vezier of <i>rekhyt</i>
leader in El Kab	1043	𐎎𐎠𐎢𐎵	828	𐎎𐎠𐎢𐎵	lord of freeholders
judge in El Kab	695	𐎎𐎠𐎢𐎵	923	𐎎𐎠𐎢𐎵	leader of freeholders
ruler in El Kab	876	𐎎𐎠𐎢𐎵	1128	𐎎𐎠𐎢𐎵	" "
keeper of El Kab	883	𐎎𐎠𐎢𐎵	1055	𐎎𐎠𐎢𐎵	mayor of S. freeholders
<i>nsut</i> , royal (booth)	114	𐎎𐎠𐎢𐎵	1123	𐎎𐎠𐎢𐎵	mayor of freeholders
<i>nstui</i> , thrones	185	𐎎𐎠𐎢𐎵	1122	𐎎𐎠𐎢𐎵	commanding freeholders
thrones in <i>ht onkh</i>	115	𐎎𐎠𐎢𐎵	1126	𐎎𐎠𐎢𐎵	conductor of freeholders
<i>nshmyt</i> , fishmonger	1345	𐎎𐎠𐎢𐎵	1019	𐎎𐎠𐎢𐎵	contenting freeholders
<i>nshdti</i> , jeweller	1680	𐎎𐎠𐎢𐎵	847	𐎎𐎠𐎢𐎵	bailiff of freeholders
<i>nt hzt</i> , crowns	173	𐎎𐎠𐎢𐎵	1124	𐎎𐎠𐎢𐎵	<i>rs</i> , bows (?)
<i>nthr</i> , divine	35	𐎎𐎠𐎢𐎵	1443	𐎎𐎠𐎢𐎵	<i>rdui</i> , nome
<i>nthr khrniu</i> , miners	1654	𐎎𐎠𐎢𐎵	1111	𐎎𐎠𐎢𐎵	<i>sered</i> , cultivator
<i>sa nthr khrniu</i> , guard of miners	1647	𐎎𐎠𐎢𐎵	1270	𐎎𐎠𐎢𐎵	<i>h</i> , entry
<i>nthr duat</i> , priestess	38	𐎎𐎠𐎢𐎵	1292	𐎎𐎠𐎢𐎵	<i>hā</i> , entered
<i>nz</i> mill; <i>besht</i> , bread	1726	𐎎𐎠𐎢𐎵	747	𐎎𐎠𐎢𐎵	<i>hdytu</i> , judges
" <i>hethnu</i> , bread	1725	𐎎𐎠𐎢𐎵	943	𐎎𐎠𐎢𐎵	<i>hb</i> , cultivation
<i>nzr</i> , carpenter	1705	𐎎𐎠𐎢𐎵	1271	𐎎𐎠𐎢𐎵	" "
<i>ru</i> , mouths of canals	1754	𐎎𐎠𐎢𐎵	1273	𐎎𐎠𐎢𐎵	" for wine
<i>re po</i> , orderer of	1034	𐎎𐎠𐎢𐎵	1281	𐎎𐎠𐎢𐎵	<i>hpu</i> , laws
<i>re pot</i> , fem. [people	1036	𐎎𐎠𐎢𐎵	620	𐎎𐎠𐎢𐎵	of king
<i>re pe</i> , orderer of Buto	886	𐎎𐎠𐎢𐎵	618	𐎎𐎠𐎢𐎵	establishing laws
<i>renkhh</i> , orderer of El Kab	885	𐎎𐎠𐎢𐎵	621	𐎎𐎠𐎢𐎵	<i>hmm</i> , a company
<i>re neb</i> , all orderers	599	𐎎𐎠𐎢𐎵	1164	𐎎𐎠𐎢𐎵	<i>hn</i> , friend
<i>db re</i> , repast	493	𐎎𐎠𐎢𐎵	306	𐎎𐎠𐎢𐎵	<i>hna</i> , jar
royal son, <i>Ramessu</i>	1813	𐎎𐎠𐎢𐎵	1719	𐎎𐎠𐎢𐎵	<i>hrt</i> , ruler
<i>runau</i> , garrison	1430	𐎎𐎠𐎢𐎵	1868	𐎎𐎠𐎢𐎵	<i>hkt</i>
<i>r = ari</i> , keeper	1402	𐎎𐎠𐎢𐎵	1916	𐎎𐎠𐎢𐎵	<i>ht</i> , hall of elders
<i>rut</i> , plough land (?)	1888	𐎎𐎠𐎢𐎵	699	𐎎𐎠𐎢𐎵	<i>haytu</i> , elders
<i>ruti</i> , embalmers	1838	𐎎𐎠𐎢𐎵	946	𐎎𐎠𐎢𐎵	" "
<i>rud</i> , fertile	457	𐎎𐎠𐎢𐎵	1149	𐎎𐎠𐎢𐎵	<i>hation</i> , leaders
<i>rud</i> , inspector	1102	𐎎𐎠𐎢𐎵	936	𐎎𐎠𐎢𐎵	leader of leaders
<i>rudun</i> , inspectors	451	𐎎𐎠𐎢𐎵	1040	𐎎𐎠𐎢𐎵	governess of dau.
<i>rfu</i> , Tura quarry	518	𐎎𐎠𐎢𐎵	1061	𐎎𐎠𐎢𐎵	leading canals
<i>rhu</i> , persons	1119	𐎎𐎠𐎢𐎵	1250	𐎎𐎠𐎢𐎵	<i>hāt</i> , plough land
<i>rhusa</i> , cakes	1715	𐎎𐎠𐎢𐎵	1192	𐎎𐎠𐎢𐎵	

<i>hät</i> , plough land	1248	𐩧𐩢𐩣𐩠𐩢𐩣	1802	𐩢𐩣𐩠	leader of Oasis
<i>hou</i> , potted flesh	1327	𐩢𐩣𐩠𐩢𐩣	1181	𐩢𐩣𐩠𐩢𐩣	<i>hsp</i> , nome
<i>ur hou</i> , physician	274	𐩢𐩣𐩠𐩢𐩣	724	𐩢𐩣𐩠𐩢𐩣𐩠𐩢𐩣	<i>hspu</i> , nomes
<i>huo</i> , physician	273	𐩢𐩣𐩠𐩢𐩣	863	𐩢𐩣𐩠𐩢𐩣𐩠𐩢𐩣	nomes of Interior
<i>hu</i> , carpenter	1702	𐩢𐩣𐩠𐩢𐩣	978	𐩢𐩣𐩠𐩢𐩣𐩠𐩢𐩣	<i>hsn</i> , palace of Qa
<i>hudt</i> , Edfu	1027	𐩢𐩣𐩠𐩢𐩣	1811	𐩢𐩣𐩠𐩢𐩣	<i>hst</i> , praiser
<i>hbo</i> , wardrobe	1660	𐩢𐩣𐩠𐩢𐩣	314	𐩢𐩣𐩠𐩢𐩣	" "
<i>lbs</i> , clothing	258	𐩢𐩣𐩠𐩢𐩣	182	𐩢𐩣𐩠𐩢𐩣	<i>hq</i> , sceptre
" "	1367	𐩢𐩣𐩠𐩢𐩣	966	𐩢𐩣𐩠𐩢𐩣	chief of chiefs
<i>hmu</i> , servants	331	𐩢𐩣𐩠𐩢𐩣	1001	𐩢𐩣𐩠𐩢𐩣	royal chief
" "	1605	𐩢𐩣𐩠𐩢𐩣	1024	𐩢𐩣𐩠𐩢𐩣	chief of Egypt
<i>hmo</i> , flax	1354	𐩢𐩣𐩠𐩢𐩣	1333	𐩢𐩣𐩠𐩢𐩣	<i>hqt</i> , beer
<i>hmm</i> , metal-worker	1679	𐩢𐩣𐩠𐩢𐩣	984	𐩢𐩣𐩠𐩢𐩣	<i>hka</i> , a palace
<i>hmnt</i>	104	𐩢𐩣𐩠𐩢𐩣	1540	𐩢𐩣𐩠𐩢𐩣	<i>ht</i> , store-house
<i>hmnt</i> , wares	1550	𐩢𐩣𐩠𐩢𐩣	504	𐩢𐩣𐩠𐩢𐩣	stores of gold
<i>hmt</i> , wife	30	𐩢𐩣𐩠𐩢𐩣	506	𐩢𐩣𐩠𐩢𐩣	for Inundation
<i>hmut</i> , women	33	𐩢𐩣𐩠𐩢𐩣	505	𐩢𐩣𐩠𐩢𐩣	for temple
<i>hmyt</i> , steersman	1529	𐩢𐩣𐩠𐩢𐩣	1246	𐩢𐩣𐩠𐩢𐩣	<i>ht</i> , canal
<i>hmt</i> , artizan	1586	𐩢𐩣𐩠𐩢𐩣	1437	𐩢𐩣𐩠𐩢𐩣	<i>htr</i> , horse
conducting all art	1023	𐩢𐩣𐩠𐩢𐩣	784	𐩢𐩣𐩠𐩢𐩣	<i>pr hz</i> , Treasury
registered artizan	548	𐩢𐩣𐩠𐩢𐩣	1865	𐩢𐩣𐩠𐩢𐩣	<i>hz md</i> , clear in words
caring for his body	242	𐩢𐩣𐩠𐩢𐩣	1297	𐩢𐩣𐩠𐩢𐩣 KH	<i>khät</i> , hall
<i>hnnuy</i> , marshman	1276	𐩢𐩣𐩠𐩢𐩣	78	𐩢𐩣𐩠𐩢𐩣	doorkeeper of <i>khät</i>
<i>hnk</i> , gift	461	𐩢𐩣𐩠𐩢𐩣	786	𐩢𐩣𐩠𐩢𐩣	hall of gold
subsidy to labour	469	𐩢𐩣𐩠𐩢𐩣	449	𐩢𐩣𐩠𐩢𐩣	scribe in halls
almonry	463	𐩢𐩣𐩠𐩢𐩣	567	𐩢𐩣𐩠𐩢𐩣	<i>khäy</i> , corn
diwan of gifts	466	𐩢𐩣𐩠𐩢𐩣	565	𐩢𐩣𐩠𐩢𐩣	<i>khäyu</i> , threshers
<i>hnsk</i>	1822	𐩢𐩣𐩠𐩢𐩣	1778	𐩢𐩣𐩠𐩢𐩣	<i>khärdau</i> , Syria
<i>hnt</i> , mistress	34	𐩢𐩣𐩠𐩢𐩣	1762	𐩢𐩣𐩠𐩢𐩣	<i>khäst</i> , desert
<i>hr</i> , inundation	1230	𐩢𐩣𐩠𐩢𐩣	49	𐩢𐩣𐩠𐩢𐩣	<i>khaut</i> } offering
banks (?)	1736	𐩢𐩣𐩠𐩢𐩣	400	𐩢𐩣𐩠𐩢𐩣	" } table
<i>hr</i> , over	1059	𐩢𐩣𐩠𐩢𐩣	172	𐩢𐩣𐩠𐩢𐩣	<i>khogäy</i> , shaver
<i>hrau</i> , moorings	1543	𐩢𐩣𐩠𐩢𐩣	183	𐩢𐩣𐩠𐩢𐩣	<i>khau</i> , weapons
<i>hr ab</i> , the Interior	622	𐩢𐩣𐩠𐩢𐩣	1941	𐩢𐩣𐩠𐩢𐩣	<i>khokhnt</i>
<i>hr sesh</i> , over scribe	1810	𐩢𐩣𐩠𐩢𐩣	1878	𐩢𐩣𐩠𐩢𐩣	<i>khu</i> , protector
over over-men	905	𐩢𐩣𐩠𐩢𐩣	1917	𐩢𐩣𐩠𐩢𐩣	" "
<i>hr seshta</i> , secretary	357	𐩢𐩣𐩠𐩢𐩣	831	𐩢𐩣𐩠𐩢𐩣	<i>khu</i> , vezier's hall
(late)	366	𐩢𐩣𐩠𐩢𐩣	1949	𐩢𐩣𐩠𐩢𐩣	<i>khuti</i> , fan
behind affairs	372	𐩢𐩣𐩠𐩢𐩣	763	𐩢𐩣𐩠𐩢𐩣	<i>khutu</i> , protectors
<i>hrt</i> , over palace	87	𐩢𐩣𐩠𐩢𐩣	1870	𐩢𐩣𐩠𐩢𐩣	" "
<i>hr tp oa</i> , ruler	1005	𐩢𐩣𐩠𐩢𐩣	1416	𐩢𐩣𐩠𐩢𐩣	<i>khpsh</i> , swordsman
<i>hr tp tau</i> , over Eg.	836	𐩢𐩣𐩠𐩢𐩣	1449	𐩢𐩣𐩠𐩢𐩣	store
<i>hsy</i> , praiser	320	𐩢𐩣𐩠𐩢𐩣	1641	𐩢𐩣𐩠𐩢𐩣	<i>khmou</i> , chisellers
" "	1062	𐩢𐩣𐩠𐩢𐩣	1691	𐩢𐩣𐩠𐩢𐩣	<i>khmti</i> , smelter
<i>hsot</i> , singing	315	𐩢𐩣𐩠𐩢𐩣	1692	𐩢𐩣𐩠𐩢𐩣	" "
<i>hsb</i> , account [Courts	568	𐩢𐩣𐩠𐩢𐩣	801	𐩢𐩣𐩠𐩢𐩣	<i>khn</i> , rower
<i>hsb tau</i> , account of	669	𐩢𐩣𐩠𐩢𐩣	1519	𐩢𐩣𐩠𐩢𐩣	<i>khnyt</i> , rowers
Treasury account	805	𐩢𐩣𐩠𐩢𐩣	895	𐩢𐩣𐩠𐩢𐩣	<i>khnut</i> , diwan
daily account	807	𐩢𐩣𐩠𐩢𐩣	1851	𐩢𐩣𐩠𐩢𐩣	" "
census	1655	𐩢𐩣𐩠𐩢𐩣	1139	𐩢𐩣𐩠𐩢𐩣	<i>khunt</i> , united

<i>khrt</i> , prison, or	1179 𐤎𐤏𐤍𐤏𐤍𐤏	1790 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sau</i> , people
„ lock-up	767 𐤎𐤏𐤍𐤏𐤍𐤏	52 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sä</i> , son
<i>khuru</i> , prisoners	1930 𐤎𐤏𐤍𐤏𐤍𐤏	58 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sät</i> , daughter [ous
„ <i>she</i> , key of lake	1240 𐤎𐤏𐤍𐤏𐤍𐤏	1814 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sät zetta</i> , posthum-
<i>khnt</i> , taster (?)	1315 𐤎𐤏𐤍𐤏𐤍𐤏	1061 𐤎𐤏𐤍𐤏𐤍𐤏	daughter of chief
„ „	1724 𐤎𐤏𐤍𐤏𐤍𐤏	1107 𐤎𐤏𐤍𐤏𐤍𐤏	<i>ssa</i> , feeding
„ harym	1809 𐤎𐤏𐤍𐤏𐤍𐤏	1717 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sau</i> , loaves
„ „	595 𐤎𐤏𐤍𐤏𐤍𐤏	171 𐤎𐤏𐤍𐤏𐤍𐤏	<i>seshsau</i> , shavers
boats of harym	1539 𐤎𐤏𐤍𐤏𐤍𐤏	1288 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sa</i> , guard
<i>khnti</i> , baker	1713 𐤎𐤏𐤍𐤏𐤍𐤏	'800 𐤎𐤏𐤍𐤏𐤍𐤏	of treasury
<i>khnt adb</i>	1205 𐤎𐤏𐤍𐤏𐤍𐤏	240 𐤎𐤏𐤍𐤏𐤍𐤏	of chief
<i>khnt khati</i> , god	1074 𐤎𐤏𐤍𐤏𐤍𐤏	1602 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sau</i> , guards
<i>khntesh</i> , garden	483 𐤎𐤏𐤍𐤏𐤍𐤏	1326 𐤎𐤏𐤍𐤏𐤍𐤏	„ „
pupil of garden	480 𐤎𐤏𐤍𐤏𐤍𐤏	1144 𐤎𐤏𐤍𐤏𐤍𐤏	guards of serfs
<i>khnt tau</i>	837 𐤎𐤏𐤍𐤏𐤍𐤏	1026 𐤎𐤏𐤍𐤏𐤍𐤏	guards of nome
<i>khnd</i> , throne steps	190 𐤎𐤏𐤍𐤏𐤍𐤏	'626 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sab</i> , judge
<i>kher o</i> , deputy	950 𐤎𐤏𐤍𐤏𐤍𐤏	191 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sapti</i> , cataloguer
deputy sealer	346 𐤎𐤏𐤍𐤏𐤍𐤏	414 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sanu</i> , tributaries
of treasury	798 𐤎𐤏𐤍𐤏𐤍𐤏	989 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sahu</i> , gratifying
<i>khrti</i> , miner	1644 𐤎𐤏𐤍𐤏𐤍𐤏	1412 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sakru</i> , paid troops
<i>kheru</i> , enemy	1400 𐤎𐤏𐤍𐤏𐤍𐤏	1065 𐤎𐤏𐤍𐤏𐤍𐤏	<i>soh sohu</i> , chief noble
<i>hez khrt</i> , clear voice	736 𐤎𐤏𐤍𐤏𐤍𐤏	1069 𐤎𐤏𐤍𐤏𐤍𐤏	new year fire noble
<i>kherp</i> , over control	1877 𐤎𐤏𐤍𐤏𐤍𐤏	1079 𐤎𐤏𐤍𐤏𐤍𐤏	<i>soh f</i> , his nobles
controller	279 𐤎𐤏𐤍𐤏𐤍𐤏	1675 𐤎𐤏𐤍𐤏𐤍𐤏	<i>se onkh</i> , artist
<i>khrd</i> , child	1887 𐤎𐤏𐤍𐤏𐤍𐤏	1676 𐤎𐤏𐤍𐤏𐤍𐤏	„ „
child of the land	1886 𐤎𐤏𐤍𐤏𐤍𐤏	1915 𐤎𐤏𐤍𐤏𐤍𐤏	<i>tp su</i>
child of Egypt	1885 𐤎𐤏𐤍𐤏𐤍𐤏	685 𐤎𐤏𐤍𐤏𐤍𐤏	<i>spr</i> , request
<i>khsf</i> , returning	1103 𐤎𐤏𐤍𐤏𐤍𐤏	1818 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sb</i> , teaching
<i>khs</i> , sacrificial	1173 𐤎𐤏𐤍𐤏𐤍𐤏	834 𐤎𐤏𐤍𐤏𐤍𐤏	of his majesty
<i>kht nb</i> , all things	460 𐤎𐤏𐤍𐤏𐤍𐤏	1117 𐤎𐤏𐤍𐤏𐤍𐤏	in Memphis
<i>khtu</i> , things	1556 𐤎𐤏𐤍𐤏𐤍𐤏	1075 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sft</i> , sword
<i>khtf</i> , before him	508 𐤎𐤏𐤍𐤏𐤍𐤏	1336 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sfd</i> , sword
pupil of the diwan	1823 𐤎𐤏𐤍𐤏𐤍𐤏	1342 𐤎𐤏𐤍𐤏𐤍𐤏	<i>spä</i> , food
<i>amukht</i> , following	199 𐤎𐤏𐤍𐤏𐤍𐤏	1028 𐤎𐤏𐤍𐤏𐤍𐤏	<i>spt</i> , nome
things of Tenu	195 𐤎𐤏𐤍𐤏𐤍𐤏	972 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sepa</i> , nome
mayor of followers	193 𐤎𐤏𐤍𐤏𐤍𐤏	1325 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sm</i> , vegetables
hall of servants	1427 𐤎𐤏𐤍𐤏𐤍𐤏	1339 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sma</i> , sacrifice
<i>khnt</i> , housemaid	1168 𐤎𐤏𐤍𐤏𐤍𐤏	26 𐤎𐤏𐤍𐤏𐤍𐤏	<i>sma</i> , united
following of art	1591 𐤎𐤏𐤍𐤏𐤍𐤏	27 𐤎𐤏𐤍𐤏𐤍𐤏	„ „
<i>khtm</i> , seal	351 𐤎𐤏𐤍𐤏𐤍𐤏	1952 𐤎𐤏𐤍𐤏𐤍𐤏	<i>smayt</i> , company
of S. and N.	341 𐤎𐤏𐤍𐤏𐤍𐤏	1071 𐤎𐤏𐤍𐤏𐤍𐤏	<i>smen</i> , establishing
of messengers	411 𐤎𐤏𐤍𐤏𐤍𐤏	291 𐤎𐤏𐤍𐤏𐤍𐤏	<i>smr</i> , companion
of gate	101 𐤎𐤏𐤍𐤏𐤍𐤏	295 𐤎𐤏𐤍𐤏𐤍𐤏	mayor of companions
sealing office	737 𐤎𐤏𐤍𐤏𐤍𐤏	297 𐤎𐤏𐤍𐤏𐤍𐤏	fellow peer
over the seal	344 𐤎𐤏𐤍𐤏𐤍𐤏	32 𐤎𐤏𐤍𐤏𐤍𐤏	<i>Her smrt</i> , queen
<i>khtmu</i> , store-boat	1541 𐤎𐤏𐤍𐤏𐤍𐤏	53 𐤎𐤏𐤍𐤏𐤍𐤏	<i>smsm</i> , eldest
<i>kht n khkr</i> , things of	1836 𐤎𐤏𐤍𐤏𐤍𐤏	945 𐤎𐤏𐤍𐤏𐤍𐤏	<i>smsu</i> , elder
<i>sä</i> , man [ornament	1162 𐤎𐤏𐤍𐤏𐤍𐤏	196 𐤎𐤏𐤍𐤏𐤍𐤏	<i>snu</i> , guide
of sacred boat	1525 𐤎𐤏𐤍𐤏𐤍𐤏	954 𐤎𐤏𐤍𐤏𐤍𐤏	<i>snu</i> , fraternity
<i>n Kashi</i> , Nubia	1407 𐤎𐤏𐤍𐤏𐤍𐤏	953 𐤎𐤏𐤍𐤏𐤍𐤏	„ „

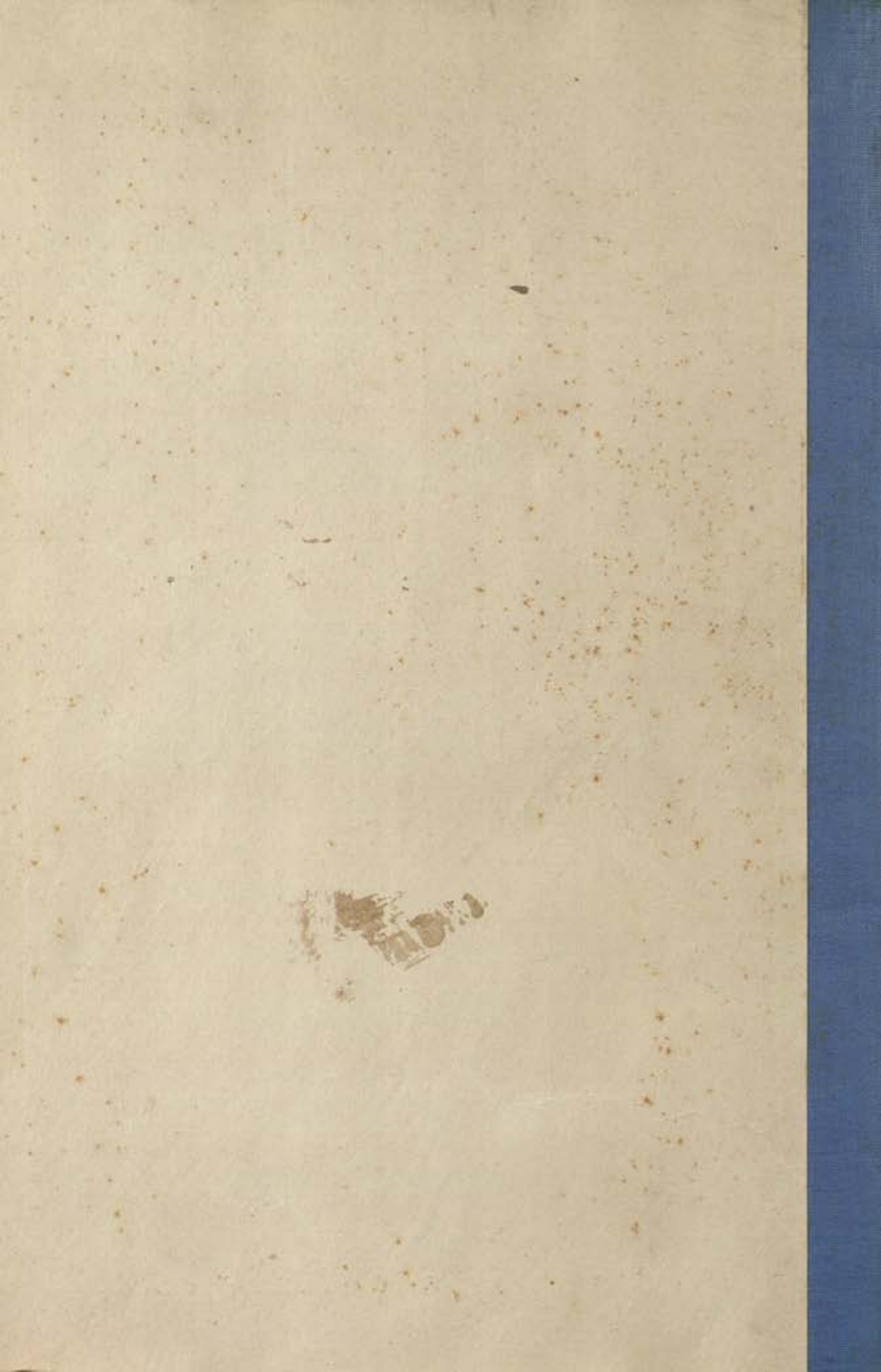
<i>snn</i> , palace of Qa	977 𐎓𐎎𐎍𐎎𐎍	1353 𐎓𐎎𐎍𐎎𐎍	<i>seshr</i> }
<i>sni</i> , armed riders	1415 𐎓𐎎𐎍𐎎𐎍	1376 𐎓𐎎𐎍𐎎𐎍	„ } clothes bag
<i>snu</i> , physician	275 𐎓𐎎𐎍𐎎𐎍	434 𐎓𐎎𐎍𐎎𐎍	„ }
expert physician	270 𐎓𐎎𐎍𐎎𐎍	1453 𐎓𐎎𐎍𐎎𐎍	<i>seshs</i> , navy uniform
<i>snbt</i> } health	282 𐎓𐎎𐎍𐎎𐎍	116 𐎓𐎎𐎍𐎎𐎍	<i>seshesht</i> } writing
„ } office	283 𐎓𐎎𐎍𐎎𐎍	1554 𐎓𐎎𐎍𐎎𐎍	„ } goddess
<i>snthr</i> , incense	2850 𐎓𐎎𐎍𐎎𐎍	133 𐎓𐎎𐎍𐎎𐎍	<i>sshkru</i> , servants
<i>sar ur</i> , great lord	938 𐎓𐎎𐎍𐎎𐎍	1820 𐎓𐎎𐎍𐎎𐎍	<i>seshta</i> , secrets
<i>sart</i> , lady	940 𐎓𐎎𐎍𐎎𐎍 (DAU. SNEFRU)	442 𐎓𐎎𐎍𐎎𐎍	<i>seqabu</i> , game pawn
<i>sar oa</i> , sole lord	937 𐎓𐎎𐎍𐎎𐎍	112 𐎓𐎎𐎍𐎎𐎍	<i>seqbu</i> , cooling
lord of Thebes	930 𐎓𐎎𐎍𐎎𐎍	1170 𐎓𐎎𐎍𐎎𐎍	<i>sât sqr</i> , girl captive
lord of Memphis	931 𐎓𐎎𐎍𐎎𐎍	1171 𐎓𐎎𐎍𐎎𐎍	<i>sqr ku</i> , captive oxen
lord of Treasury	780 𐎓𐎎𐎍𐎎𐎍	1042 𐎓𐎎𐎍𐎎𐎍	<i>seka</i> , a town
house of lords	629 𐎓𐎎𐎍𐎎𐎍	1387 𐎓𐎎𐎍𐎎𐎍	<i>ta set</i> , Nubia
lords judges	922 𐎓𐎎𐎍𐎎𐎍	1771 𐎓𐎎𐎍𐎎𐎍	<i>setu</i> , mountains
<i>sary</i> , over workers	1596 𐎓𐎎𐎍𐎎𐎍	865 𐎓𐎎𐎍𐎎𐎍	<i>set res</i> , Nubia
<i>sq</i> , pioneers	1395 𐎓𐎎𐎍𐎎𐎍	1774 𐎓𐎎𐎍𐎎𐎍	deserts of west
<i>sehrr</i> , contenting	846 𐎓𐎎𐎍𐎎𐎍	1773 𐎓𐎎𐎍𐎎𐎍	lodges of queen
<i>seh</i> , council hall	75 𐎓𐎎𐎍𐎎𐎍	1458 𐎓𐎎𐎍𐎎𐎍	<i>stiu</i> , archers
great peer of <i>seh</i>	890 𐎓𐎎𐎍𐎎𐎍	1563 𐎓𐎎𐎍𐎎𐎍	golden archer
<i>seh</i> , hall of king	470 𐎓𐎎𐎍𐎎𐎍	189 𐎓𐎎𐎍𐎎𐎍	<i>st</i> , seat
<i>sehu</i> } troops	1422 𐎓𐎎𐎍𐎎𐎍	103 𐎓𐎎𐎍𐎎𐎍	noble seats
<i>sehui</i> } of	1759 𐎓𐎎𐎍𐎎𐎍	1203 𐎓𐎎𐎍𐎎𐎍	<i>set mt</i> , seat of dead
<i>sehuu</i> } soldiers	951 𐎓𐎎𐎍𐎎𐎍	162 𐎓𐎎𐎍𐎎𐎍	<i>st ab</i> , seat of heart
<i>sehqbb</i> , cool place	1340 𐎓𐎎𐎍𐎎𐎍	1409 𐎓𐎎𐎍𐎎𐎍	<i>stau</i> , archers
<i>shm</i> , doing service	1002 𐎓𐎎𐎍𐎎𐎍	1300 𐎓𐎎𐎍𐎎𐎍	<i>sta ht</i> , branding
<i>shz</i> , chief expert	572 𐎓𐎎𐎍𐎎𐎍	235 𐎓𐎎𐎍𐎎𐎍	<i>stpt</i> , chosen
oculist (?)	289 𐎓𐎎𐎍𐎎𐎍	1154 𐎓𐎎𐎍𐎎𐎍	<i>sthet</i> , carrying
<i>skhu</i> , stone builder	539 𐎓𐎎𐎍𐎎𐎍	471 𐎓𐎎𐎍𐎎𐎍	<i>sd</i> , festival
<i>skhm ab</i> , diversion	485 𐎓𐎎𐎍𐎎𐎍	486 𐎓𐎎𐎍𐎎𐎍	<i>sdo</i> , amusements
<i>skhm</i> , powerful	925 𐎓𐎎𐎍𐎎𐎍	349 𐎓𐎎𐎍𐎎𐎍	<i>szaut</i> , seal
<i>skhmti</i> , 2 crowns	177 𐎓𐎎𐎍𐎎𐎍	820 𐎓𐎎𐎍𐎎𐎍	<i>szuuty</i> , sealer
<i>sekhkru</i> , adorer	129 𐎓𐎎𐎍𐎎𐎍	345 𐎓𐎎𐎍𐎎𐎍	<i>szuuty kher</i> , sub-sealer
<i>skhent</i> , advancing	962 𐎓𐎎𐎍𐎎𐎍	448 𐎓𐎎𐎍𐎎𐎍	<i>szm</i> , deputy
<i>skhet</i> , wet land	1150 𐎓𐎎𐎍𐎎𐎍	594 𐎓𐎎𐎍𐎎𐎍	<i>szm uo</i> , sole hearer
<i>sekhti</i> , man of land	1263 𐎓𐎎𐎍𐎎𐎍	83 𐎓𐎎𐎍𐎎𐎍	<i>szm osh</i> , hearing call
public work in land	1860 𐎓𐎎𐎍𐎎𐎍	1202 𐎓𐎎𐎍𐎎𐎍	<i>szm</i> , complaints
<i>sekhau</i> , weaver	1727 𐎓𐎎𐎍𐎎𐎍	687 𐎓𐎎𐎍𐎎𐎍	„ } hearer of
<i>sekhet</i> (?)	1906 𐎓𐎎𐎍𐎎𐎍	688 𐎓𐎎𐎍𐎎𐎍	} hearings alone
<i>sesm</i> , horse	1433 𐎓𐎎𐎍𐎎𐎍	76 𐎓𐎎𐎍𐎎𐎍	<i>szm nbt</i> , all complaints
<i>sesh</i> , scribe	1145 𐎓𐎎𐎍𐎎𐎍	458 𐎓𐎎𐎍𐎎𐎍	<i>szt</i> , making sound
<i>sesh o</i> , scribe of writings	417 𐎓𐎎𐎍𐎎𐎍	796 𐎓𐎎𐎍𐎎𐎍	<i>khrr</i> , under sound
<i>sesh</i> , bird pools	1561 𐎓𐎎𐎍𐎎𐎍	549 𐎓𐎎𐎍𐎎𐎍	<i>szt htp</i> , a fort
<i>seshp</i> , beater	1683 𐎓𐎎𐎍𐎎𐎍	55 𐎓𐎎𐎍𐎎𐎍	<i>szt</i> , royal child
<i>seshm</i> , conductor	1015 𐎓𐎎𐎍𐎎𐎍	990 𐎓𐎎𐎍𐎎𐎍	<i>szt ut</i> , new towns
„ „	1558 𐎓𐎎𐎍𐎎𐎍	1030 𐎓𐎎𐎍𐎎𐎍	<i>ur she</i> , great lake
<i>seshn</i> , weaver	1377 𐎓𐎎𐎍𐎎𐎍	1031 𐎓𐎎𐎍𐎎𐎍	Oxyrhynkhos
<i>seshent</i> , lotus seed	1324 𐎓𐎎𐎍𐎎𐎍	1235 𐎓𐎎𐎍𐎎𐎍	lakes of the north
<i>seshr</i> , washing	1372 𐎓𐎎𐎍𐎎𐎍	1236 𐎓𐎎𐎍𐎎𐎍	lakes of nome limit
<i>seshriuti</i> , washing-man	1374 𐎓𐎎𐎍𐎎𐎍	1233 𐎓𐎎𐎍𐎎𐎍	lake of crocodile

<i>she rs</i> , south lake	1234	ᠰᠡᠷᠰᠡ	596	ᠰᠡᠷᠰᠡ	secretary, private
" "	970	ᠰᠡᠷᠰᠡ	1841	ᠰᠡᠷᠰᠡ	secret words
lakes and land	1180	ᠰᠡᠷᠰᠡ	1842	ᠰᠡᠷᠰᠡ	all secrets
<i>she(mu)</i> , light	261	ᠰᠡᠷᠰᠡ	974	ᠰᠡᠷᠰᠡ	lake of jackals
<i>shdyt</i> , taxes	1133	ᠰᠡᠷᠰᠡ	1640	ᠰᠡᠷᠰᠡ	<i>shed</i> , maker
<i>shaot</i> , Nubian	1791	ᠰᠡᠷᠰᠡ	57	ᠰᠡᠷᠰᠡ	<i>shed mes</i> , sucklings
<i>shād</i> , burying	1239	ᠰᠡᠷᠰᠡ	1183	ᠰᠡᠷᠰᠡ	<i>qa</i> , higher land
<i>shot</i> , letters	426	ᠰᠡᠷᠰᠡ	1408	ᠰᠡᠷᠰᠡ	<i>qaur</i> , transport
letters of king	583	ᠰᠡᠷᠰᠡ	1448	ᠰᠡᠷᠰᠡ	<i>qoh</i> , corner
<i>shoyu</i> , cakes	1714	ᠰᠡᠷᠰᠡ	312	ᠰᠡᠷᠰᠡ	<i>qor</i> (?), charioteer
<i>shot</i> , basin	163	ᠰᠡᠷᠰᠡ	1182	ᠰᠡᠷᠰᠡ	<i>qohi</i> , higher land
<i>shyuti</i> , lighting	264	ᠰᠡᠷᠰᠡ	1651	ᠰᠡᠷᠰᠡ	<i>qotu</i> , works
" "	1548	ᠰᠡᠷᠰᠡ	1635	ᠰᠡᠷᠰᠡ	<i>qemdu</i> , sculptor
<i>shuti</i> , nome	1005	ᠰᠡᠷᠰᠡ	389	ᠰᠡᠷᠰᠡ	<i>qenou</i> , valiant
<i>shuti</i>	1947	ᠰᠡᠷᠰᠡ	1398	ᠰᠡᠷᠰᠡ	<i>qenyti</i> , braves
<i>sheps</i> , noble	959	ᠰᠡᠷᠰᠡ	1397	ᠰᠡᠷᠰᠡ	<i>qen</i> , brave
<i>shepset</i> , noble (fem.)	958	ᠰᠡᠷᠰᠡ	673	ᠰᠡᠷᠰᠡ	<i>qnbti</i> } land
<i>shemsu</i> , follower	190	ᠰᠡᠷᠰᠡ	676	ᠰᠡᠷᠰᠡ	<i>qnb</i> } property
by ship	213	ᠰᠡᠷᠰᠡ	576	ᠰᠡᠷᠰᠡ	" } court
<i>shetm</i> , sanctuary	947	ᠰᠡᠷᠰᠡ	1682	ᠰᠡᠷᠰᠡ	<i>qeri</i> , smith
<i>shen</i> , joiner	1706	ᠰᠡᠷᠰᠡ	1681	ᠰᠡᠷᠰᠡ	<i>qer</i> , smith
<i>sheny</i> , roll-call	1657	ᠰᠡᠷᠰᠡ	510	ᠰᠡᠷᠰᠡ	<i>qeru</i> , porters
<i>shenytu</i> , council	405	ᠰᠡᠷᠰᠡ	1606	ᠰᠡᠷᠰᠡ	<i>qersti</i> , sculptors
<i>sheny</i> , shaving	170	ᠰᠡᠷᠰᠡ	707	ᠰᠡᠷᠰᠡ	of tomb
<i>shen ta</i> , grass	1891	ᠰᠡᠷᠰᠡ	1616	ᠰᠡᠷᠰᠡ	of vezier
<i>sheno</i> , medicine	288	ᠰᠡᠷᠰᠡ	703	ᠰᠡᠷᠰᠡ	<i>qt uo</i> , private room
" "	563	ᠰᠡᠷᠰᠡ	991	ᠰᠡᠷᠰᠡ	<i>qd</i> , visiting towns
<i>sheno</i> , store	1319	ᠰᠡᠷᠰᠡ	444	ᠰᠡᠷᠰᠡ	<i>qdnut</i> , fitters
store of increase	1272	ᠰᠡᠷᠰᠡ	1470	ᠰᠡᠷᠰᠡ	<i>qd</i> , finishing fort
<i>shenut</i> , granaries	550	ᠰᠡᠷᠰᠡ	538	ᠰᠡᠷᠰᠡ	<i>qd</i> , building
" (?) "	564	ᠰᠡᠷᠰᠡ	1621	ᠰᠡᠷᠰᠡ	scribe of fitting
" (?) "	374	ᠰᠡᠷᠰᠡ	446	ᠰᠡᠷᠰᠡ	<i>qdut</i> , carvers
" (?) "	1920	ᠰᠡᠷᠰᠡ	1619	ᠰᠡᠷᠰᠡ	mayor of fitting
<i>shent</i> , court	473	ᠰᠡᠷᠰᠡ	858	ᠰᠡᠷᠰᠡ	<i>ma qd</i> , in circuit
" "	1186	ᠰᠡᠷᠰᠡ	1076	ᠰᠡᠷᠰᠡ	<i>qd qd</i> , touring
<i>shenyu</i> , guard	219	ᠰᠡᠷᠰᠡ	130	ᠰᠡᠷᠰᠡ	<i>ke</i> , head-cloth
<i>shendiau</i> , guard	218	ᠰᠡᠷᠰᠡ	1278	ᠰᠡᠷᠰᠡ	<i>ka</i> , gardener
<i>shendyt</i> , kilt	220	ᠰᠡᠷᠰᠡ	1277	ᠰᠡᠷᠰᠡ	" "
<i>shesp</i> , receiver	1830	ᠰᠡᠷᠰᠡ	146	ᠰᠡᠷᠰᠡ	<i>kap</i> , nursery
of waste	1936	ᠰᠡᠷᠰᠡ	1175	ᠰᠡᠷᠰᠡ	child of nursery
of nobles	1073	ᠰᠡᠷᠰᠡ	148	ᠰᠡᠷᠰᠡ	diwan of nursery
(?) (?)	1829	ᠰᠡᠷᠰᠡ	1937	ᠰᠡᠷᠰᠡ	over the bulls
lake of Asiatics	969	ᠰᠡᠷᠰᠡ	1542	ᠰᠡᠷᠰᠡ	<i>kbnti</i> , of Byblos
lakes	1238	ᠰᠡᠷᠰᠡ	1414	ᠰᠡᠷᠰᠡ	<i>kroshr</i> , kalasires
<i>shashamo</i>	1464	ᠰᠡᠷᠰᠡ	869	ᠰᠡᠷᠰᠡ	<i>kesh</i> , Nubia
orderer of	134	ᠰᠡᠷᠰᠡ	1927	ᠰᠡᠷᠰᠡ	<i>kashes</i> (?)
<i>shekru</i>	144	ᠰᠡᠷᠰᠡ	513	ᠰᠡᠷᠰᠡ	<i>kat</i> , public works
<i>shetu</i> , lake lands	1237	ᠰᠡᠷᠰᠡ	1438	ᠰᠡᠷᠰᠡ	<i>kathna</i> } captain of
<i>shat</i> , dues	1756	ᠰᠡᠷᠰᠡ	1439	ᠰᠡᠷᠰᠡ	" } chariot
<i>sheta</i> , secrets	602	ᠰᠡᠷᠰᠡ	309	ᠰᠡᠷᠰᠡ	

gs, beside king	304 𐎔𐎕𐎗𐎕𐎗 G	1432 𐎕𐎕𐎕𐎕𐎕𐎕	thesi, exalted
gs pr, sidesmen	1082 𐎕𐎕𐎕𐎕	1141 𐎕𐎕𐎕𐎕	thesut, gangs
beside the 30	651 𐎕𐎕𐎕𐎕𐎕	1147 𐎕𐎕𐎕𐎕𐎕𐎕	gangs of towns
gs, boat-tender	1537 𐎕𐎕𐎕𐎕	1520 𐎕𐎕𐎕𐎕𐎕	gang of sailors
gsui	1084 𐎕𐎕𐎕𐎕	1410 𐎕𐎕𐎕𐎕	archers
gsu	1085 𐎕𐎕𐎕𐎕	1411 𐎕𐎕𐎕𐎕	fighters
tp ta, head of land	835 𐎕𐎕𐎕 T	1366 𐎕𐎕𐎕𐎕𐎕𐎕 D	dāt, uniforms
scribe of land	1200 𐎕𐎕𐎕	𐎕𐎕𐎕𐎕𐎕𐎕	dā hr, look after
ta, vezier's court	822 𐎕𐎕𐎕𐎕	619 𐎕𐎕𐎕𐎕𐎕	dādā, giver of laws
vezier of city	670 𐎕𐎕𐎕𐎕𐎕	1739 𐎕𐎕𐎕	bearer of flask
vezier of land	671 𐎕𐎕𐎕𐎕𐎕	1738 𐎕𐎕𐎕𐎕	bearer of chair
tetu, things	330 𐎕𐎕𐎕	287 𐎕𐎕𐎕𐎕𐎕	dau, medicine (?)
tu, things	1081 𐎕𐎕𐎕𐎕𐎕	252 𐎕𐎕𐎕𐎕	dua, five men
keeper of copper	1678 𐎕𐎕𐎕𐎕𐎕𐎕	253 𐎕𐎕𐎕𐎕	house of five men
tau, smelter (?)	1690 𐎕𐎕𐎕𐎕	789 𐎕𐎕𐎕𐎕𐎕𐎕	duat, royal chapel
ta, bread	1317 𐎕𐎕𐎕𐎕𐎕𐎕	706 𐎕𐎕𐎕𐎕	„ nthr, priestess
ibtu, sandals	1732 𐎕𐎕𐎕𐎕𐎕	1160 𐎕𐎕𐎕𐎕𐎕𐎕	temple service
tpu, head	1513 𐎕𐎕𐎕𐎕𐎕𐎕	968 𐎕𐎕𐎕𐎕	dḫ, Buto
tp khr, under-head	833 𐎕𐎕𐎕𐎕	1286 𐎕𐎕𐎕𐎕𐎕𐎕	dḫ, taster
tmt, clothing	1368 𐎕𐎕𐎕𐎕𐎕𐎕	1287 𐎕𐎕𐎕𐎕	db, horn, cattle
tm, sledge	1604 𐎕𐎕𐎕𐎕𐎕	1052 𐎕𐎕𐎕𐎕𐎕𐎕	dmyt, town
„ „	544 𐎕𐎕𐎕𐎕	1423 𐎕𐎕𐎕𐎕	dn, auditor
tmhu, Libyans	1794 𐎕𐎕𐎕𐎕𐎕	1302 𐎕𐎕𐎕	dhr, cattle
tnnu, counting	1760 𐎕𐎕𐎕𐎕	497 𐎕𐎕𐎕	ds, flint knife
trkh, prisoners (?)	1929 𐎕𐎕𐎕𐎕𐎕𐎕	1341 𐎕𐎕𐎕𐎕𐎕	ds, slaughter
tkh, drink	1335 𐎕𐎕𐎕𐎕	1779 𐎕𐎕𐎕𐎕𐎕𐎕	dshrt, desert
„ „	1598 𐎕𐎕𐎕𐎕	1328 𐎕𐎕𐎕𐎕𐎕𐎕	dqrtu, records
tsh, boundary	1204 𐎕𐎕𐎕	1568 𐎕𐎕𐎕𐎕𐎕	dqru, records
tkn, explorer (?)	1819 𐎕𐎕𐎕	759 𐎕𐎕𐎕𐎕𐎕	dqrunu, records
Teta, king	987 𐎕𐎕𐎕𐎕	1530 𐎕𐎕𐎕𐎕𐎕	di, pilot
tati	1919 𐎕𐎕𐎕	1864 𐎕𐎕𐎕𐎕 Z	zay, travelling
that, vezier	624 𐎕𐎕𐎕𐎕𐎕 TH	1196 𐎕𐎕𐎕𐎕	zāzatt, domain
„ „	590 𐎕𐎕𐎕𐎕𐎕	1731 𐎕𐎕𐎕𐎕	zāuo, divide
„ „	823 𐎕𐎕𐎕𐎕𐎕	1140 𐎕𐎕𐎕𐎕𐎕	zāmu, enrolled
that, in Heliopolis	826 𐎕𐎕𐎕𐎕𐎕	1219 𐎕𐎕𐎕𐎕	zā md, directions
thārt, Sile	1473 𐎕𐎕𐎕𐎕𐎕	908 𐎕𐎕𐎕𐎕𐎕	zaznut, council
„ „	1053 𐎕𐎕𐎕𐎕𐎕	914 𐎕𐎕𐎕𐎕𐎕	„ „
thā } standard	1922 𐎕𐎕𐎕𐎕𐎕	817 𐎕𐎕𐎕𐎕𐎕𐎕	zatn, increase
sirau } bearers	1426 𐎕𐎕𐎕𐎕𐎕	382 𐎕𐎕𐎕𐎕	zo, examiner
king's fan-bearer	255 𐎕𐎕𐎕𐎕𐎕𐎕	1048 𐎕𐎕𐎕𐎕	zu f, nome
tha, manager	1301 𐎕𐎕𐎕𐎕𐎕	335 𐎕𐎕𐎕	zbo } finger-mark
thairir, cakes	1718 𐎕𐎕𐎕𐎕𐎕𐎕	332 𐎕𐎕𐎕𐎕	zbou } as sealing
thau, sails	1524 𐎕𐎕𐎕	333 𐎕𐎕𐎕𐎕𐎕	„ „
thma, embankments	1229 𐎕𐎕𐎕𐎕	334 𐎕𐎕𐎕	zbt, sealing
„ „	1942 𐎕𐎕𐎕𐎕	949 𐎕𐎕𐎕𐎕	„ „
Thennu, Thinis	1047 𐎕𐎕𐎕𐎕	496 𐎕𐎕𐎕𐎕	zfa, food
thnt } register of	1290 𐎕𐎕𐎕𐎕	1313 𐎕𐎕𐎕𐎕𐎕𐎕	zfu } offerings
„ } cattle	1143 𐎕𐎕𐎕𐎕𐎕	1310 𐎕𐎕𐎕𐎕	zft } „
thet } amethyst	1674 𐎕𐎕𐎕𐎕𐎕	838 𐎕𐎕𐎕𐎕𐎕	zr, limit
„ (?)	72 𐎕𐎕𐎕𐎕𐎕	29 𐎕𐎕𐎕𐎕	zd, said







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